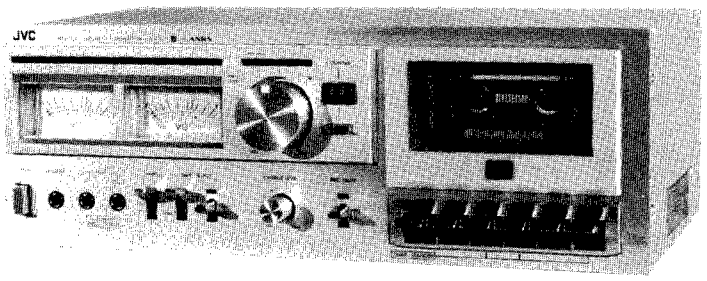
JVC

SERVICE MANUAL

MODEL

KD-A3 A/B/C/E/J/U

STEREO CASSETTE DECK



No. 4183
April 1979

Contents

Specifications

Type : Stereo cassette deck
Track system : 4-track, 2-channel
Tape speed : 1-7/8 inch/sec (4.8 cm/sec)
Frequency response:

0 VU	Metal tape;	30—12500 Hz ± 3 dB (Typical)
	SA/CrO_2 tape;	30— 8000 Hz ± 3 dB (Typical)
-20 VU	Metal tape;	20—18000 Hz
	*1	30—16000 Hz ± 3 dB (Typical)
	SA/CrO_2 tape;	20—18000 Hz
	*2	30—16000 Hz ± 3 dB (Typical)
	SF/Normal tape *3	20—17000 Hz
		30—15000 Hz ± 3 dB (Typical)

Surpasses DIN 45 500

S/N ratio : 60 dB (from peak level, weighted, Metal tape)
The S/N is improved by 5 dB at 1 kHz and by 10 dB above 5 kHz with ANRS on. (DIN 45 500 weighted)
Effect of Super ANRS: (normal tape)
Improvement of S/N: the same as with ANRS
Improvement of frequency response: 0 VU recording; 6 dB at 10 kHz
+5 VU recording; 12 dB at 10 kHz
Improvement of distortion : 0 VU recording; 3% or less at 10 kHz
+5 VU recording; 3% or less at 10 kHz
Wow and flutter : 0.055% (WRMS), 0.15% (DIN 45 500)
Crosstalk : 65 dB (1 kHz)
Harmonic distortion: K3; 0.4%, THD; 1.0% (Metal tape, 1 kHz 0 VU)
Bias : AC bias (85 kHz)
Erasure : AC erasure (85 kHz)
Heads : 2 heads
SEN ALLOY head for recording/playback and Two-gap SEN ALLOY head for erasure
Motor : Electronic Governer DC motor
Fast forward time : 80 sec. with C-60 cassette
Rewind time : 80 sec. with C-60 cassette
Semiconductors : 5 ICs, 21 transistors, 31 diodes, 1 SCR
Input terminals : Mic jack x 2,
Max. sensitivity; 0.2 mV(—72 dBs)
Matching impedance; 600Ω—10 kΩ
Input jack x 2,
Min. input level; 80 mV(—20 dBs)
Input impedance; 100 kΩ
Output terminals : Output jack x 2,
Output level; 0—300 mV
Output impedance; 5 kΩ
Matching impedance; 50 kΩ or more
Headphone jack x 1,
Output level; 0.3 mW/8 Ω
Matching impedance; 8Ω—1 kΩ
Power requirement : AC 120 V, 60 Hz (KD-A3C/J)
AC 240/220/120 V, 50/60 Hz (KD-A3A/B/E)
AC 240/220/120/100 V, 50/60 Hz (KD-A3U)
Power consumption: 12 W
Dimensions : 16-9/16" (420 mm) W
5-7/8" (149 mm) H
10-5/16" (262 mm) D
Weight : 11.4 lbs (5.2 kg)

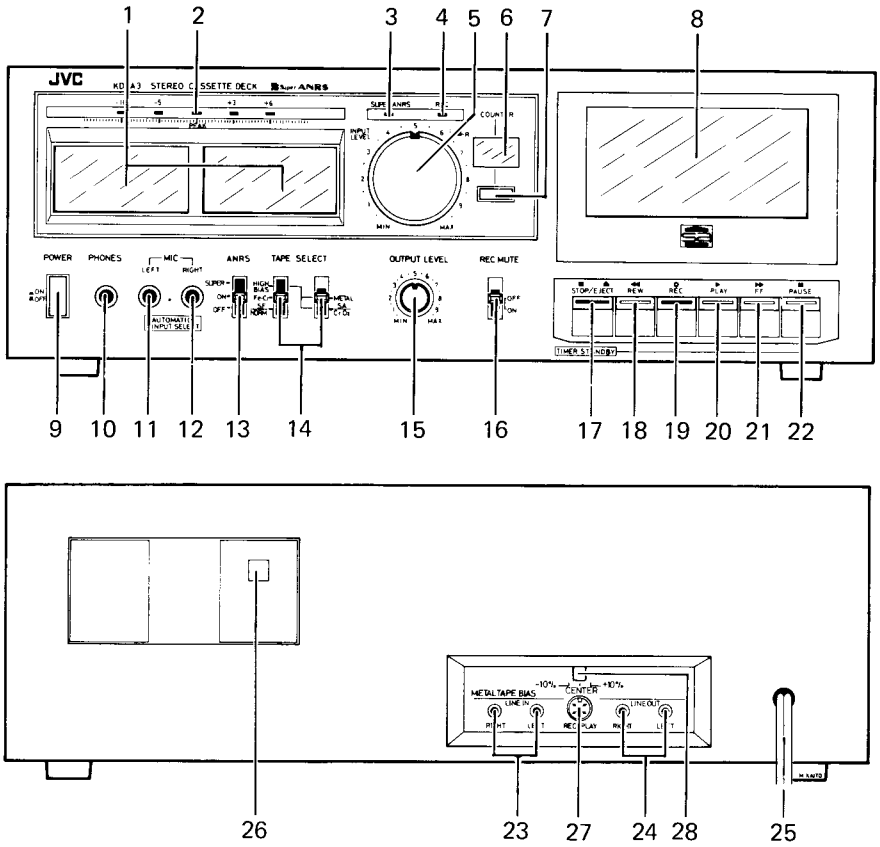
Note: *1 ... SCOTCH METAFINE or Equivalent
*2 ... TDK SA or Equivalent
*3 ... MAXELL UD or Equivalent

Design and specifications are subject to change without notice.

Features

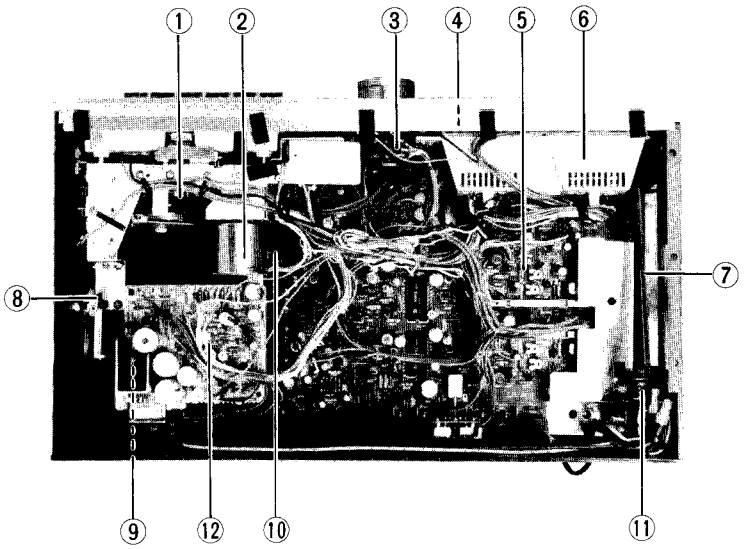
- 4-position Tape Select Switches allow all kinds of tape, including the new Metal Tape, to be used.
- An SA erase head with high erase efficiency is used so that Metal Tape can be erased.
- ANRS which lowers tape hiss noise so that it is inaudible and Super ANRS which improves linearity at high frequencies are incorporated.
- 5-point peak indicators are for easier and more accurate checking of peak levels.
- Timer standby capability for automatic start of recording or playback using an AC timer.
- With the REC MUTE switch, you leave silent passages between program material.
- Output level control possible
- Automatic input selector
- Geared and oil-damped cassette holder
- Large VU meters with backlight

Controls and Connections

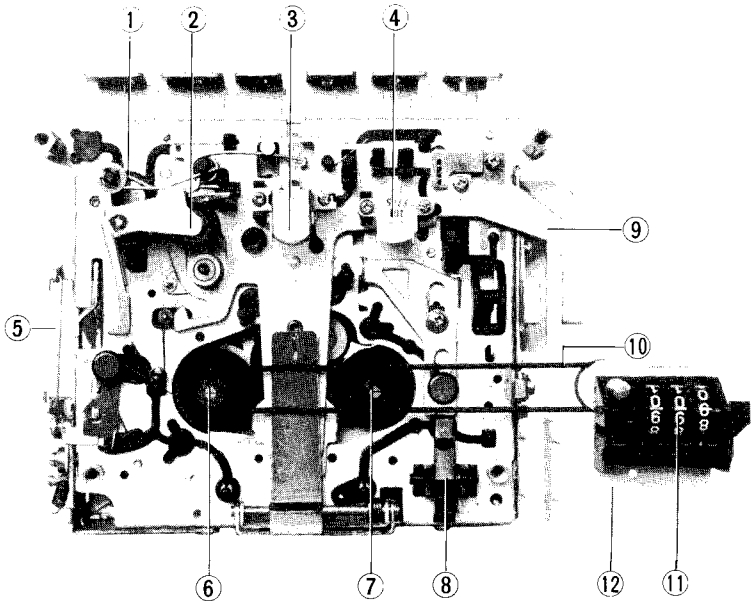


1. Level meters
2. Multi-peak level indicators
3. Super-ANRS indicator
4. Recording indicator
5. INPUT LEVEL controls: forward knob = Left channel
   rearward knob = Right channel
6. Tape counter
7. Counter reset button
8. Cassette holder
9. POWER switch
10. Headphone jack (PHONES)
11. Left channel microphone jack (MIC-L)
12. Right channel microphone jack (MIC-R)
13. ANRS switch
14. TAPE SELECT switch
15. OUTPUT LEVEL control
16. Record muting switch (REC MUTE)
17. ■ STOP/▲ EJECT lever
18. ◀◀ REW (Rewind) lever
19. ○ REC (Recording) lever
20. ▶ PLAY lever
21. ▶▶ FF (Fast forward) lever
22. ❚❚ PAUSE lever
23. LINE IN terminals
24. LINE OUT terminals
25. Power cord
26. Voltage select switch (KD-A3A/B/E/U)
27. REC/PLAY socket (DIN socket)
28. METAL TAPE BIAS switch

Main Parts Location

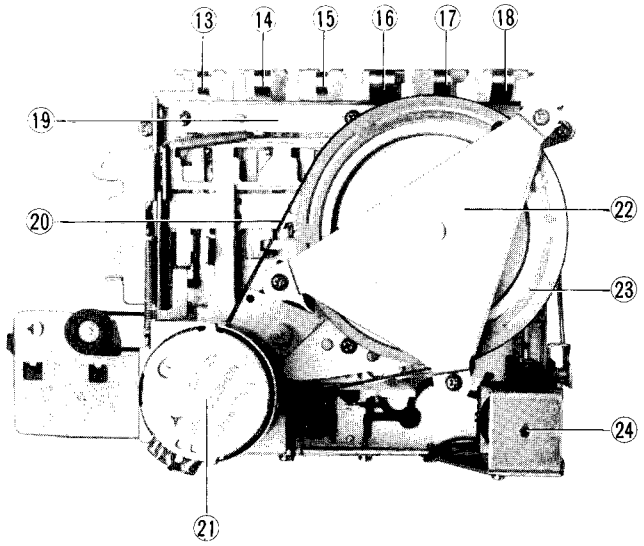


1. Flywheel ass'y
2. Motor
3. Volume P.W. board ass'y
4. Multi-peak level P.W. board ass'y
5. Main amp. P.W. board ass'y
6. Meters cover (KD-A3A/C/E/J/U)
   Meters bracket (KD-A3B)
7. Remote bar
8. Geared and oil-damped brake
9. Power transformer
10. Recording lever
11. Power switch
12. Power supply P.W. board ass'y



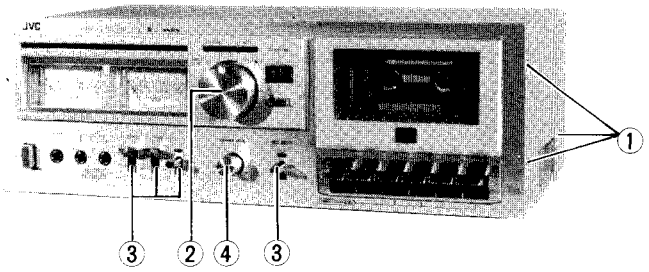
(Mechanical parts)

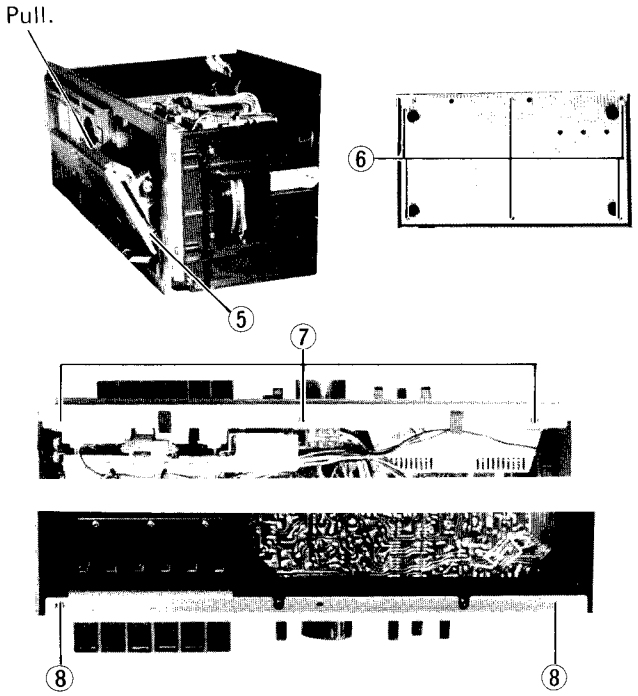
1. Pinch roller spring
2. Pinch roller arm ass'y
3. REC/PB head
4. Erase head
5. Wire (for automatic stop)
6. Reel disk ass'y (take-up)
7. Reel disk ass'y (supply)
8. Recording safety lever
9. Switch lever
10. Belt (tape counter)
11. Tape counter ass'y
12. Tape counter bracket
13. Stop/Eject bar ass'y
14. Rewind bar
15. Recording bar
16. Playback bar ass'y
17. Fast forward bar
18. Pause bar
19. Button spring
20. Belt (capstan)
21. Motor
22. Flywheel bracket
23. Flywheel ass'y
24. DC solenoid

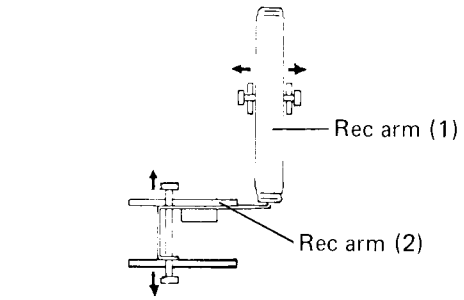


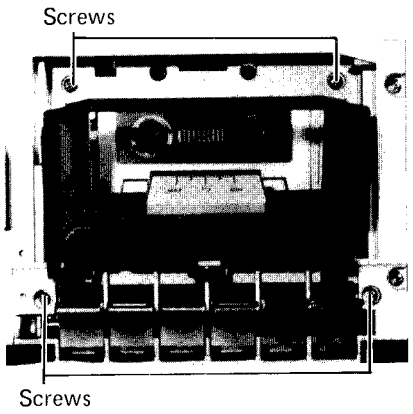
Removal of the Main Parts

Observe care in handling the parts since the parts are small in size and the distances between them are short due to a deck design aimed mainly at compactness and high performance.









Removal of the enclosure assembly parts

1. **Top cover**
   Remove 6 screws ① fastening the top cover (when removing the top cover, hold its rear upward).

2. **Knobs**
   Input level controls
   forward knob – Left channel
   rearward knob – Right channel) . . . . . ②
   Select switches . . . . . ③
   (ANRS, TAPE SELECT, REC MUTE)
   Output level control . . . . . ④
   Pull them forward.

3. **Cassette lid**
   1) To open the cassette lid, depress the eject lever.
   2) Remove a screw ⑤ fastening the cassette holder on its lower right side.
   3) Pull off the cassette lid to upper side.

4. **Bottom cover**
   Remove 6 screws ⑥ fastening the bottom cover.

5. **Front plate**
   1) Remove 3 screws ⑦ (on top) and 2 screws ⑧ (on bottom) fastening the front plate.
   2) Remove the front plate forward.

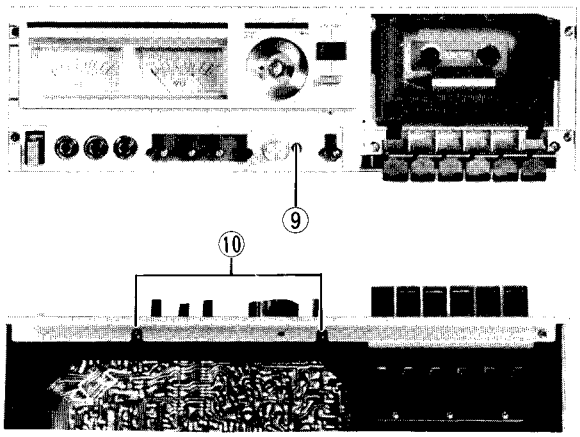
Removal of the mechanical assembly

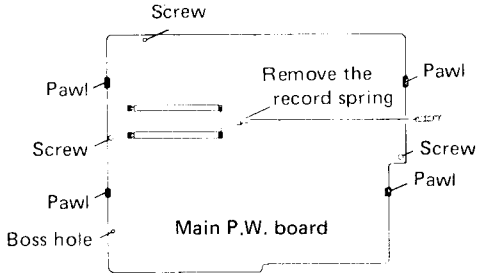
1. To remove the recording arm (1), push to open the molded part securing the recording arm shaft on both its sides.

2. To remove the recording arm (2)
   1) Remove the recording spring.
   2) Push to open the molded part securing the recording arm shaft on both its sides.

   Caution: In the removal, be careful not to break the molded pawls.

3. Remove 4 screws (2 each on the upper and lower sides) fastening the mechanical assembly to the front panel.

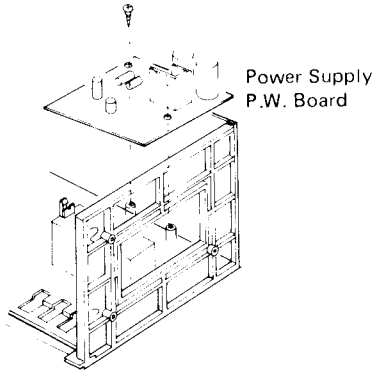




Removal of the main P.W. board ass'y and power supply P.W. board ass'y

1. Main amp P.W.board ass'y

1) Remove a screw ⑨ fastening the front panel.
2) Remove 2 screws ⑩ fastening the front panel on bottom.
3) Remove 3 screws fastening the P.W. board.
4) Remove 2 plastic rivets fixing the PIN jack ass'y.
5) Remove the recording spring.
6) Remove the 4 molded pawls securing the P.W. board.

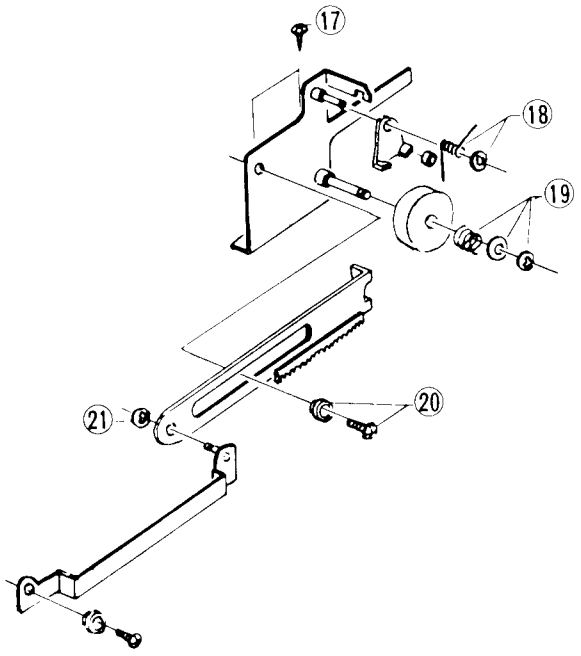


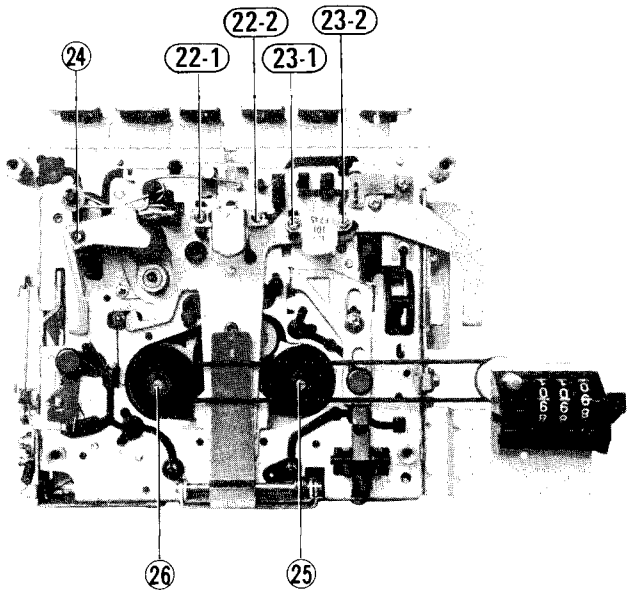
2. Power supply P.W. board ass'y

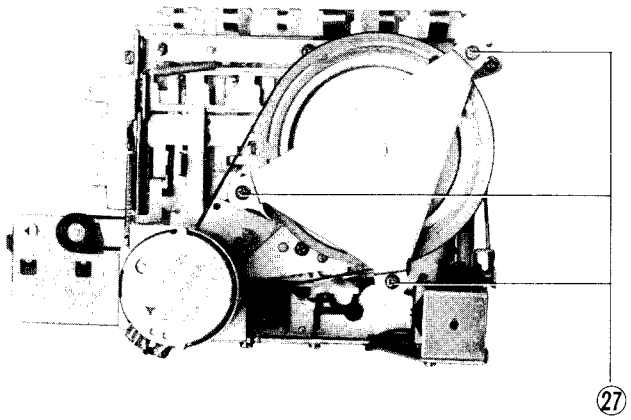
Remove 2 screws securing the Power Supply P.W. board.

Removal of the door brake and its related parts

17. To remove the gear frame, remove the 2 screws.
18. To remove the brake arm and rubber tire, remove the E-ring and torsion spring.
19. To remove the spur gear and the brake drum, remove the E-ring, washer and spring.
20. To remove the rack plate, remove the screw and the collar.
21. To remove the brake lever assembly, remove the E-ring.







Removal of the mechanical parts

22. To remove the record/playback head, remove the 2 screws (22-1, 22-2 for adjustment).
23. To remove the erase head, remove the 2 screws (23-1, 23-2 for adjustment).
24. To remove the pinch roller arm assembly, remove the E-ring.
25. To remove the supply reel disk, pull out the reel stopper.
26. To remove the take-up reel disk, pull out the reel stopper and remove the counter belt.

Note: 1. Remove the reel stoppers with a piece of sheet metal inserted between the reel disk and the stopper.
2. Be careful not to stain the counter belt.

27. To remove the flywheel assembly by pulling out, remove the flywheel bracket by removing the 3 screws and the capstan belt.

Note: 1. When replacing the flywheel, be sure to employ washers and spring.
2. Be careful not to soil the capstan belt.

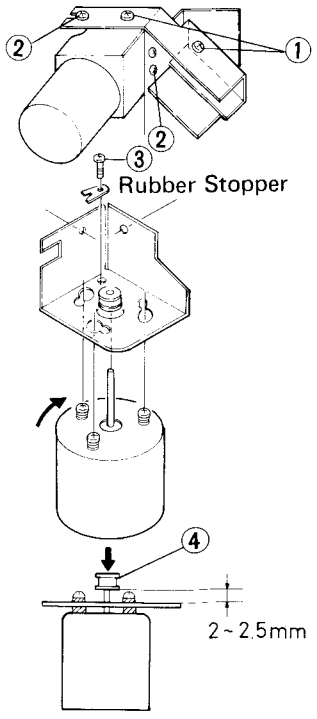
Removal of the motor

1. Remove the 2 screws ① fastening the bracket of the reed switch P.W. board.
2. Remove the capstan belt from motor pulley.
3. Remove the 2 screws ② fastening the motor bracket.
4. Pull out the motor pulley.
   *Be careful to pull out the motor pulley in the same direction as motor shaft. (Don't deflect its direction.)
5. Remove a screw ③ fastening the rubber stopper.
6. To remove the motor, turn it as arrow mark direction (counter-clockwise).

Replacing of the motor

1. Assemble the motor screws and cushion rubbers as same method of before removing the motor, and fix it to the motor bracket.
2. Press the motor pulley ④ as in the following illustration.

Note: When replacing the motor, check next section.
1) Replace the motor correct position? (Don't deflect the motor.)
2) Runs the capstan belt in the center of the motor pulley?
3) Runs the capstan belt in the center of the flywheel?



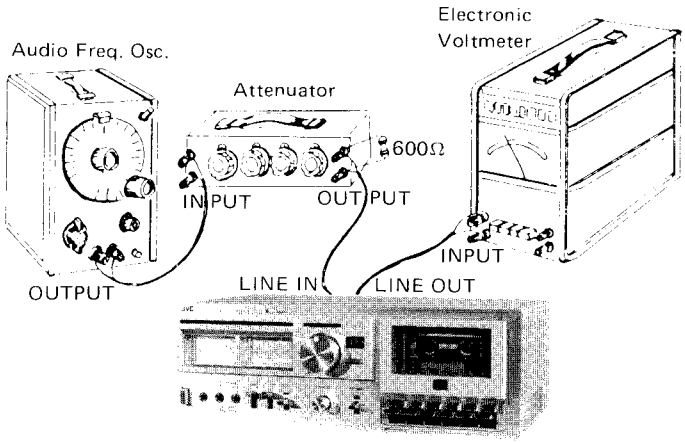
No. 4183

Main Adjustments

[I] Equipment and measuring instruments used for adjustment.

1. Electrical adjustment

1) Electronic voltmeter
2) Audio frequency oscillator
   (range; 50–20 kHz and output 0 dB with impedance 600 Ω)
3) Attenuator
4) Standard tapes for REC/PB
   Maxell UD – SF tape
   TDK SA – SA tape
   SCOTCH METAFINE – METAL tape
   } or equivalent
5) Reference tapes for playback (JVC Test Tape)
   VTT-658 (for head azimuth adj.)
   VTT-656 (for motor speed, wow flutter adj.)
   VTT-664 (for Reference level 1 kHz)
   VTT-675N (for playback frequency response)
6) Resistors
   100 Ω (for measurement of the bias current)
   600 Ω (for attenuator matching)



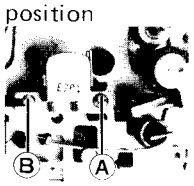
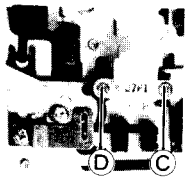
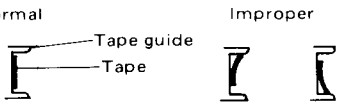
KD-A3

2. Mechanical adjustment

1) Gauge for checking the head position.
2) Torque gauge
3) Blank tape (C-120) for tape running checker.

[II] Adjustment and repair of the mechanism

(Adjust the mechanism or confirm that it is in normal operating condition prior to the adjustment of the electrical circuit.)

Item	Adjustment	Adjusting point	Standard value	Remarks
Adjusting record/ playback head position 	1. Connect an electronic voltmeter to the LINE OUT terminals. 2. Play back the VTT-658 test tape. 3. Adjust the head angle with the screw A until the reading of the electronic voltmeter becomes maximum for both channels. 4. After adjusting, set the screw with screw bond.	Screw A	Maximum	1. If the head is worn, disconnected or exceedingly magnetized so as not to provide the necessary characteristics, replace it with a new one. After replacement, the head position adjustment as well as the playback level adjustment, the bias current adjustment and the recording level adjustment are all necessary. 2. If the output difference between the left and right channels exceeds 3–4 dB, the head is defective. Replace it with a new one.
Adjusting erase head height 	Employ a special cassette (C-120) from which parts to the casing, where the erase head, record/playback head and capstan engage, has been cut away. Perform tape transport with the cassette tape. Adjust the screw C until the tape runs in the center of the erase head tape guide. 	Screw C		Be sure to perform this adjustment after replacing the erase head.
Adjusting motor speed	Connect a speed meter to the LINE OUT terminals. Play back the VTT-656 test tape. Adjust the semi-fixed resistor in the motor until the reading of the speed meter is 300 Hz.	Semi-fixed resistor in the motor	3000 Hz	If the speed meter functions as a wow and flutter meter, also, connect the deck to the INPUT terminals of the meter.

Item	Adjustment	Adjusting point	Standard value	Remarks
Checking play-back torque	Employ a torque testing cassette tape for the checking, or remove the cassette cover and use a torque gauge.		40~70 gr-cm	If the standard torque is not obtained, replace the take-up reel disc assembly.
Checking fast forward torque	Measure the torque in the fast forward mode in the same manner as in the above.		More than 70 gr-cm	If the standard torque is not obtained, perform the following. 1. Clean the capstan belt, the idler circumference, the motor pulley, the take-up reel disc circumference, the flywheel circumference, etc. 2. Replace the capstan belt or idler ass'y.
Checking rewind torque	Measure the torque in the rewind mode in the same manner as in the above.		More than 70 gr-cm	If the standard torque is not obtained, clean the capstan belt, idler, motor pulley, flywheel circumference, supply reel disc circumference, etc.
Adjusting the auto-stop mechanism	Perform the adjustment with the 2 screws securing the solenoid.			Check to see if the locked points of the cassette operation levers and the friction-prone points are applied with molybdenum.
Checking wow and flutter	Connect a wow and flutter meter to the LINE OUT terminals. Play back the VTT-656 test tape. Check to see if the reading of the meter is within 0.05% (WRMS).			If the reading become moving value even if conforming to the standard, a re-claim may be raised. Repairs are necessary.

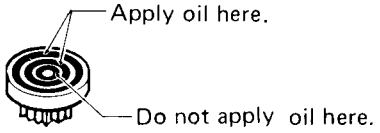
[III] Repair of wow flutter

If wow and flutter increase, check the following points. If there is defect in revolving parts, the wow and flutter generated will increase in proportion to the number of revolutions.
Play a 3000 Hz test tape, and defective part can be detected from the sound.

Section	Trouble	Repair
Capstan and flywheel	Capstan shaft has excessive run-out. Flywheel turns heavily. (shaft seisure, thrust play, etc.)	Replace flywheel. Clean the capstan shaft in the flywheel. Replace the capstan assembly.
Pinch roller	Rough rotation (Deformation scratches, or dust) The angular position of the pinch roller is not correct. The pinch roller pressure is not correct.	Replace pinch roller, or pinch roller spring. Clean the pinch roller or apply oil to the rotary shaft. Adjust the pinch roller so that it is parallel with the capstan shaft. Replace the pinch roller spring.
Belt	Belt has undue run-out. Belt is dirty or slippery.	Check the belt. Replace the belt.
Back tension	Back tension is irregular, or back tension is too strong.	Replace back compression spring (under supply disc).
Motor	Motor shaft has undue run-out. Motor pulley is oily and dusty.	Replace motor. Clean motor pulley.

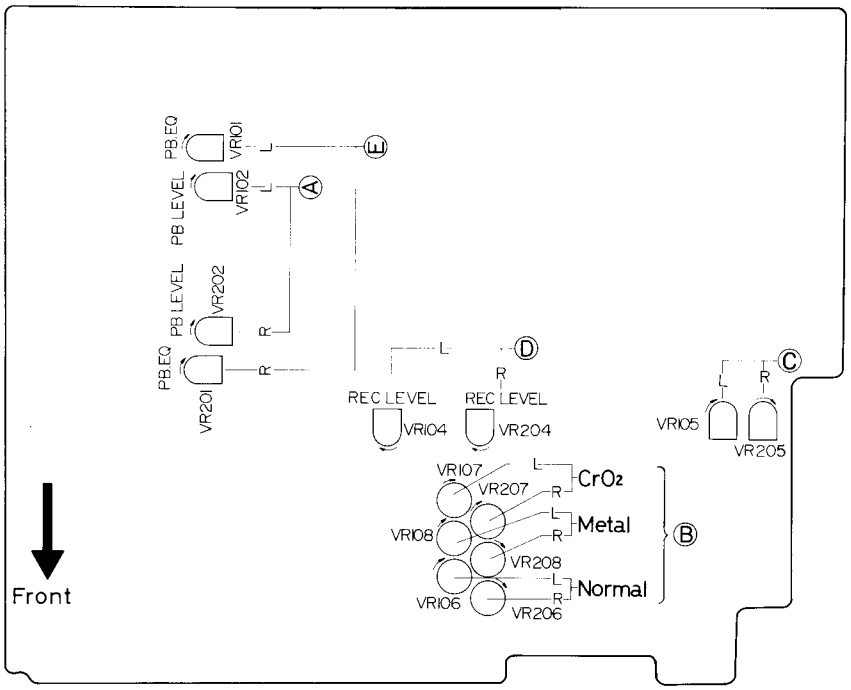
Damping gear oil

Oil employed — Torque grease specified by JVC (KANTO KASEI GP-608)
Applying method — Apply in both concaved sections as shown in the figure.



[IV] Electrical adjustments location

Ⓐ For playback level adjustment (Turning in the direction of the arrow increases the playback levels.)
Ⓑ For bias current adjustment (Turning in the direction of the arrow increases the bias current value.)
Ⓒ For meter deflection adjustment (Turning in the direction of the arrow increases the deflection angles.)
Ⓓ For recording level adjustment (Turning in the direction of the arrow increases the recording level.)
Ⓔ For playback frequency response adjustment (Turning in the direction of the arrow increases the high frequency levels.)

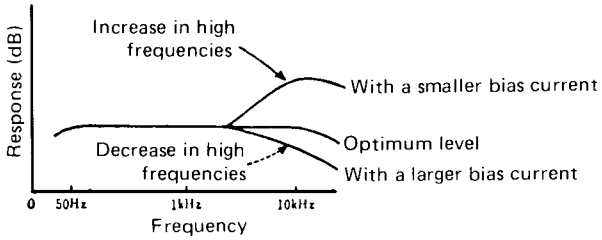
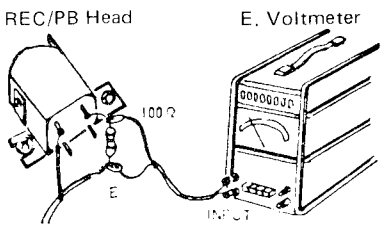


[V] Electrical circuit adjustment procedure

In all the steps (marked by an asterisk *) except the "Adjusting bias current", the adjustment is important. Be sure to perform it.

Adjustment should be performed in the sequential numerical order of the following:

Step	Item	Adjustment	Adjusting point	Standard value	Remarks
1*	Adjusting playback level	1. Play back the VTT-664 Reference tape (1 kHz) with the Tape select switch set to the NORMAL position. 2. Adjust VR102 and VR202 until the LINE OUT becomes 0.3 V (about −8 dB).	VR102, 202	0.3 V (−8 dB)	1. This adjustment becomes necessary when a change in playback level results (for example, due to head replacement). 2. Perform this adjustment with the ANRS switch set to OFF and with the OUTPUT level control set max.
2	Playback frequency response	1. Play back the TMT-6002N (63 Hz, 1 kHz and 10 kHz) reference tape. 2. Adjust VR101, 201 until the LINE OUT becomes −8 dBs.	VR101, 201	Reference frequency; 1 kHz, 0 ± 2 dB at 10 kHz	ANRS switch: OFF Output level control: MAX
3*	Adjusting VU meter sensitivity	1. Set the cassette deck to its recording mode. 2. Apply a 1 kHz, approx. −10 dBs signal to the LINE IN terminals. 3. Adjust the recording level controls until the signal is available at −8 dBs at the LINE OUT terminals. 4. Adjust VR105 and VR205 until the VU meters deflect to 0.	VR105, 205	0 VU	Perform the adjustment when the parts are replaced.

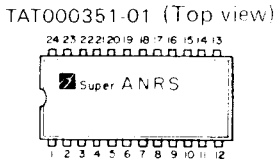
Step	Item	Adjustment	Adjusting Point	Standard value	Remarks
4	Checking record/ playback frequency response	Record 1 kHz, 50 Hz and 12.5 kHz signals at an input level of 0 VU −20 dB. Play back the tape. Check to see that the 50 Hz and 12.5 kHz signal output deviations fall within the standard range, using the 1 kHz signal output as a reference. (It is basically desirable that the 1 kHz, 50 Hz and 12.5 kHz signal outputs are the same.)	For normal tape; VR106, 206 For chrome tape; VR107, 207	Reference frequency; 1 kHz 0 ± 3 dB at 50 Hz 0 ± 3 dB at 12.5 kHz	ANRS switch: OFF This checking should be performed for normal and chrome tapes and for both right and left channels. Adjustment using a FeCr tape should not be performed.
5	Checking recording bias current	Record 1 kHz, 50 Hz and 12.5 kHz signals at an input level of 0 VU −20 dB. Play back the tape. Adjust VR106 and VR206 (for a normal tape), VR107 and VR207 (for a chrome tape), VR108 and VR208 (for a metal tape) until the indicated deviation of the 12.5 kHz signal output from the 1 kHz signal output becomes 0.	For metal tape; VR108, 208	Output deviation; 0	1. Bias current adjustment for a cassette deck should generally be performed referring to the record/playback frequency response. This is because the frequency response of a cassette deck depends more greatly upon the bias current than does that of an open reel deck. The current measuring method described below is an alternative one. 2. If the bias current is not properly adjusted, the record and playback characteristics becomes as shown in the left figure.
					
		Alternative method 1. Set the deck to its recording mode. 2. Connect a 100Ω resistor to the grounding terminal (+ terminal at playback) and the lead wire of the head as shown below. 3. Measure voltage at both ends of the resistor with electronic voltmeter. 		Reference value: With normal tape; 30 mV With chrome tape; 42 mV With metal tape; 65 mV	1. In order to distinguish the − terminal of the head from its + terminal, touch the terminals with a finger while the deck is in the playback mode. The VU meters deflect when the − terminal during recording is touched. (For a record/playback head, the polarity is reversed according to whether recording or playback.) 2. Be sure to employ a shielded wire.
6	Adjusting recording level	1. Apply a 1 kHz, approx. −10 dB signal to the LINE IN terminals. Adjust the recording level controls until the signal is available at 0.3 V (about −8 dB) at the LINE OUT terminals. 2. After checking to see if the VU meters point to 0, record the signal applied to both left and right channels using a normal tape. 3. Play back the recorded part. Perform the recording signal adjustment with VR104 and VR204 so that the VU meters deflect to 0.	VR104, 204	0 VU	The level difference between left and right channels for normal tape and chrome tape should be less than 1 dB (1 VU). Perform the adjustment using a normal tape, level difference between recording and playback for CrO_2 and FeCr tapes should be less than 1.5 dB, and that between left and right channels should also be less than 1.0 dB.
7	Checking record/ playback signal distortion	1. Record a 1 kHz, 0 VU −4 dBs signal to LINE IN terminals and perform recording with the VU meters pointed to 0. 2. Play back the recorded part. Check the output with a distortion meter to see if the value conforms to the standard value.		Normal tape; 1.2 %	Be sure to perform this adjustment following bias current and recording level adjustments.

Step	Item	Adjustment	Adjusting point	Standard value	Remarks
8	Checking signal-to-noise ratio in recording/playback	1. Record a 1 kHz, 0 VU signal. Stop the input by disconnecting from the terminal to perform non-signal recording. 2. Play back the recorded part. Measure the 0 VU recording output and the non-signal recording output for comparison using an electronic voltmeter. Check to see if the value conforms to the standard value.		Normal tape; More than 42 dB Chrome tape; More than 42 dB	Apply an output (−72dBs) to the MIC terminals with the recording level controls set to maximum so that the VU meters deflect to 0.
9	Checking erasing coefficient	1. Apply a 1 kHz signal to the LINE IN terminals. Adjust the recording level controls until the VU meters deflect to 0. 2. Perform recording with the signal enhanced by 20 dB. 3. Erase a part of the recording. 4. Measure the output difference between the erased part and non-erased part to compare with an electronic voltmeter.		More than 65 dB	For the measuring, connect a band pass filter between the deck and the electronic voltmeter. Input (1kHz 0 VU +20 dB) → Tape deck (recording, erasing) → Band pass filter → Electronic voltmeter

Integrant Circuit

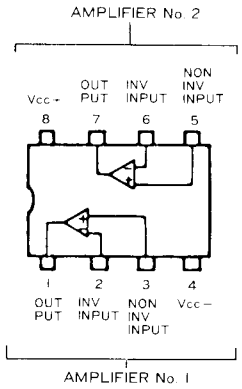
IC101, 201 TAT000351-01 Super ANRS circuit

(Top view)

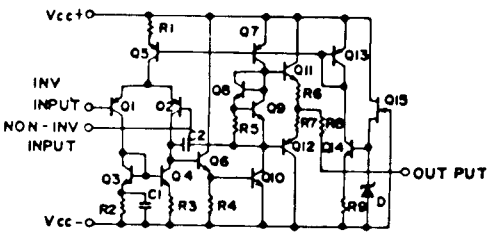


IC901 UPC4558C ANRS control amp. circuit

(Top view)



Equivalent circuit (1/2)



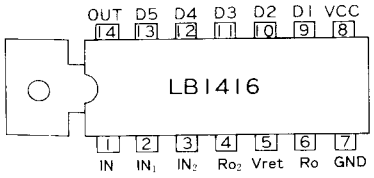
IC902 UPC4557C Headphone amp.

Top view is the same as UPC4558C.

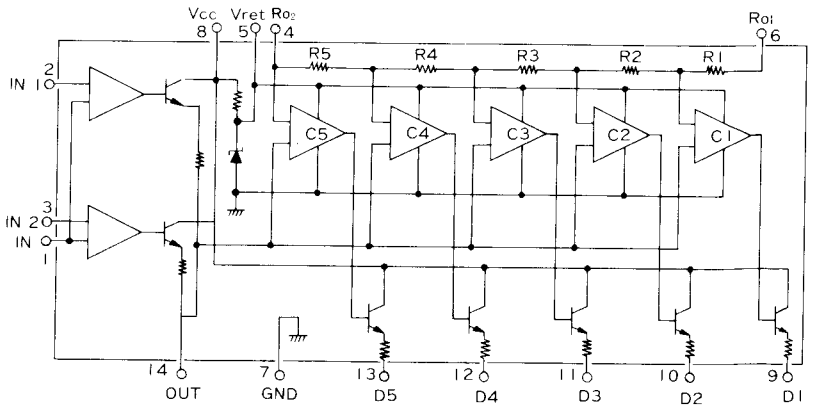
Equivalent circuit is the same as UPC4558C except R8 only.

IC903 LB1416 Multi-peak level circuit

(Top view)

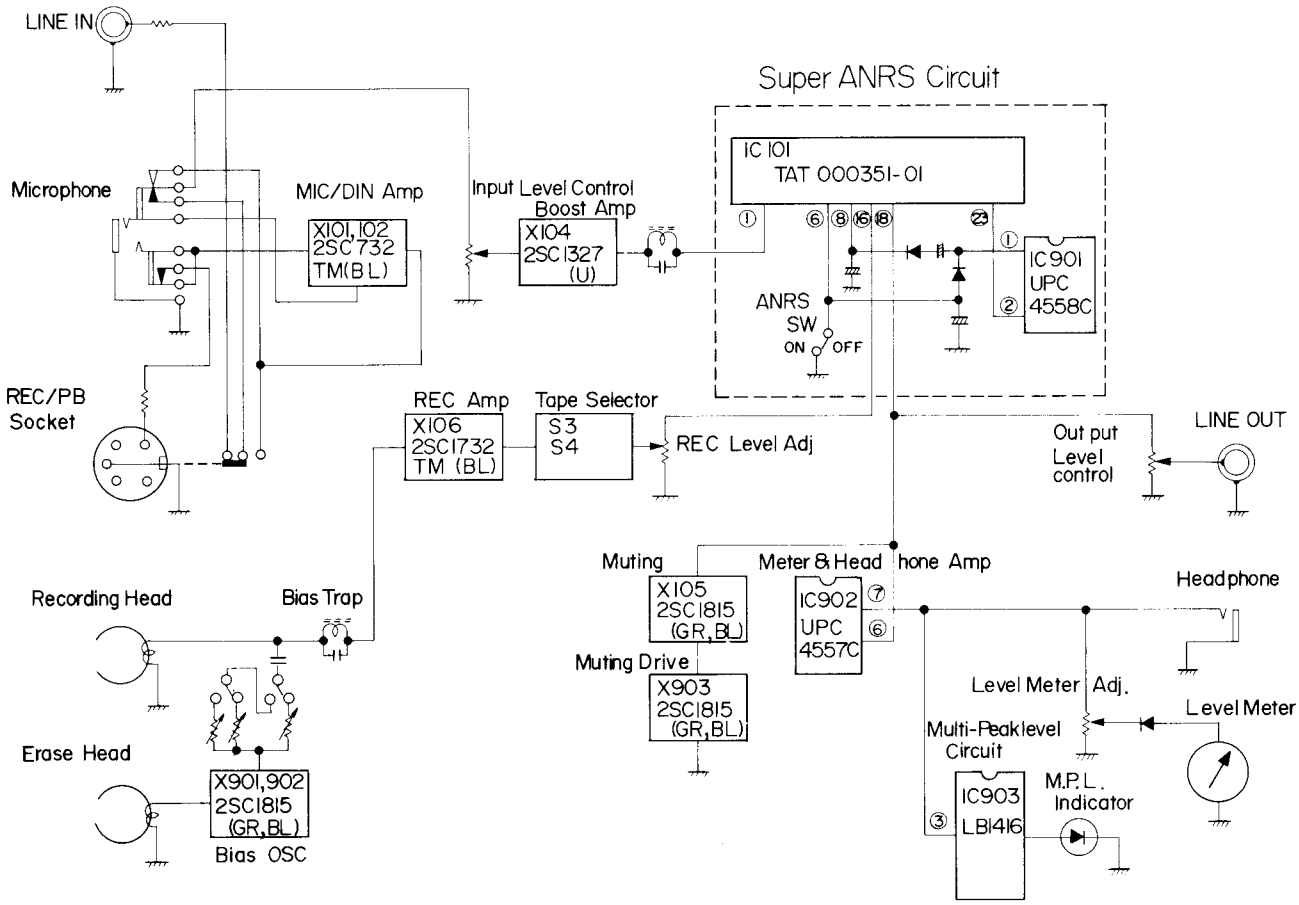


Equivalent circuit

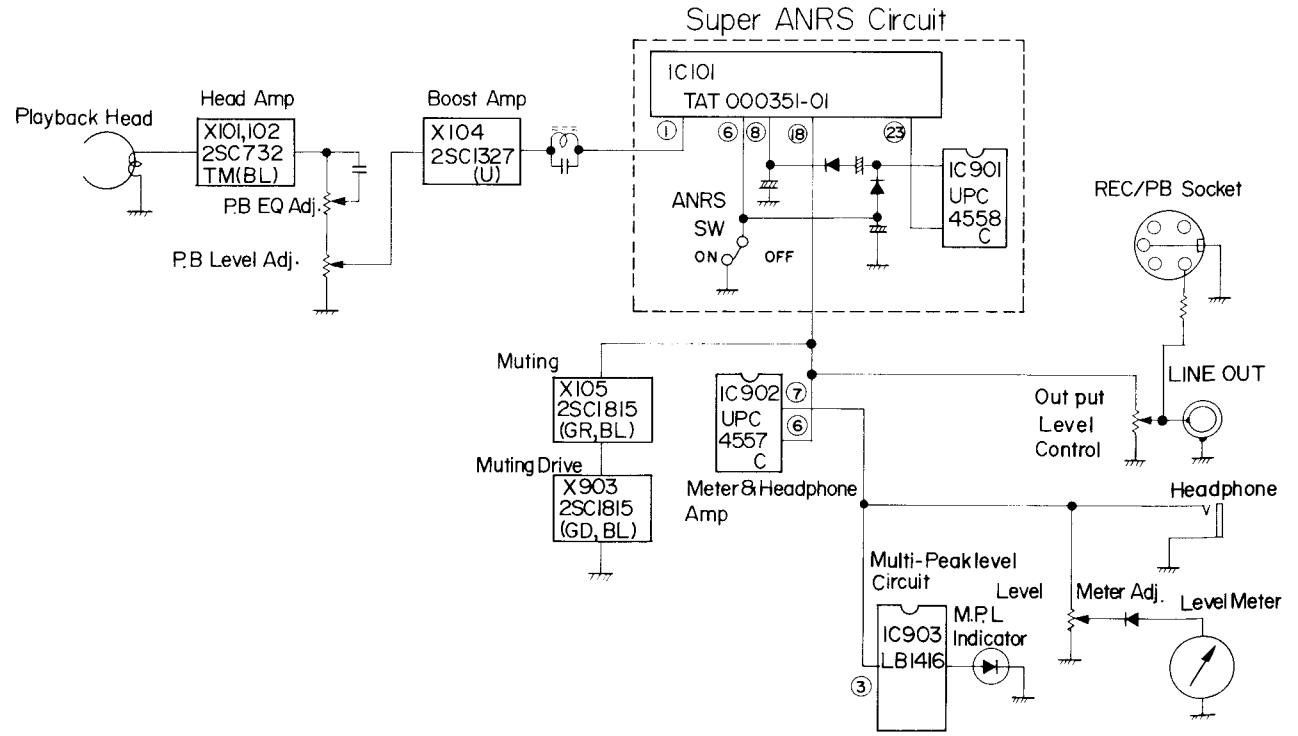


Block Diagram

Recording System



Playback System



No. 4183

Maintenance

To get long, trouble-free service, maintenance is important. Do not forget cleaning and demagnetizing.

Cleaning

After long use, the heads and tape part – capstan, pinch roller, etc. – will become dirty with dust or magnetic particles. Dirty heads cause imperfect erasing or high frequency drop-off. A dirty capstan and pinch roller will cause unstable tape speed, leading to increased wow and flutter. Always keep them clean by following the procedure below.

1. Heads

1) Push Eject button to open the cassette holder.
2) Use the head cleaning stick provided to wipe the surface where the tape comes into contact with the head.
(It is effective to moisten the cotton with alcohol.)

2. Pinch rollar and capstan

Do the same method as heads.

3. Cabinet

When the cabinet becomes dirty, wipe it with a soft cloth soaked with a neutral cleaning solution of a polishing cloth.

* Do not use thinner or benzine.

Demagnetizing

The heads are made from a material resistant to magnetization, but after long use they become magnetized.

A magnet brought into their vicinity can magnetize the heads, causing excess noise. If noise seems to have increased, demagnetize the heads with a head demagnetizer through the following procedure.

1. Turn the POWER switch OFF.
2. Wrap the tip of the demagnetizer with vinyl tape or soft cloth so as not to damage the head surface. Switch on the demagnetizer and bring it close to the head.
3. Move the tip of the demagnetizer slowly first to the left and right, then up and down in front of the head.
Gradually move it away from the head and switch it off at a distance of more than 30 cm. (12")
4. The erase head need not be demagnetized. The capstan shaft and tape guide should be demagnetized in the same way as the record/playback head.

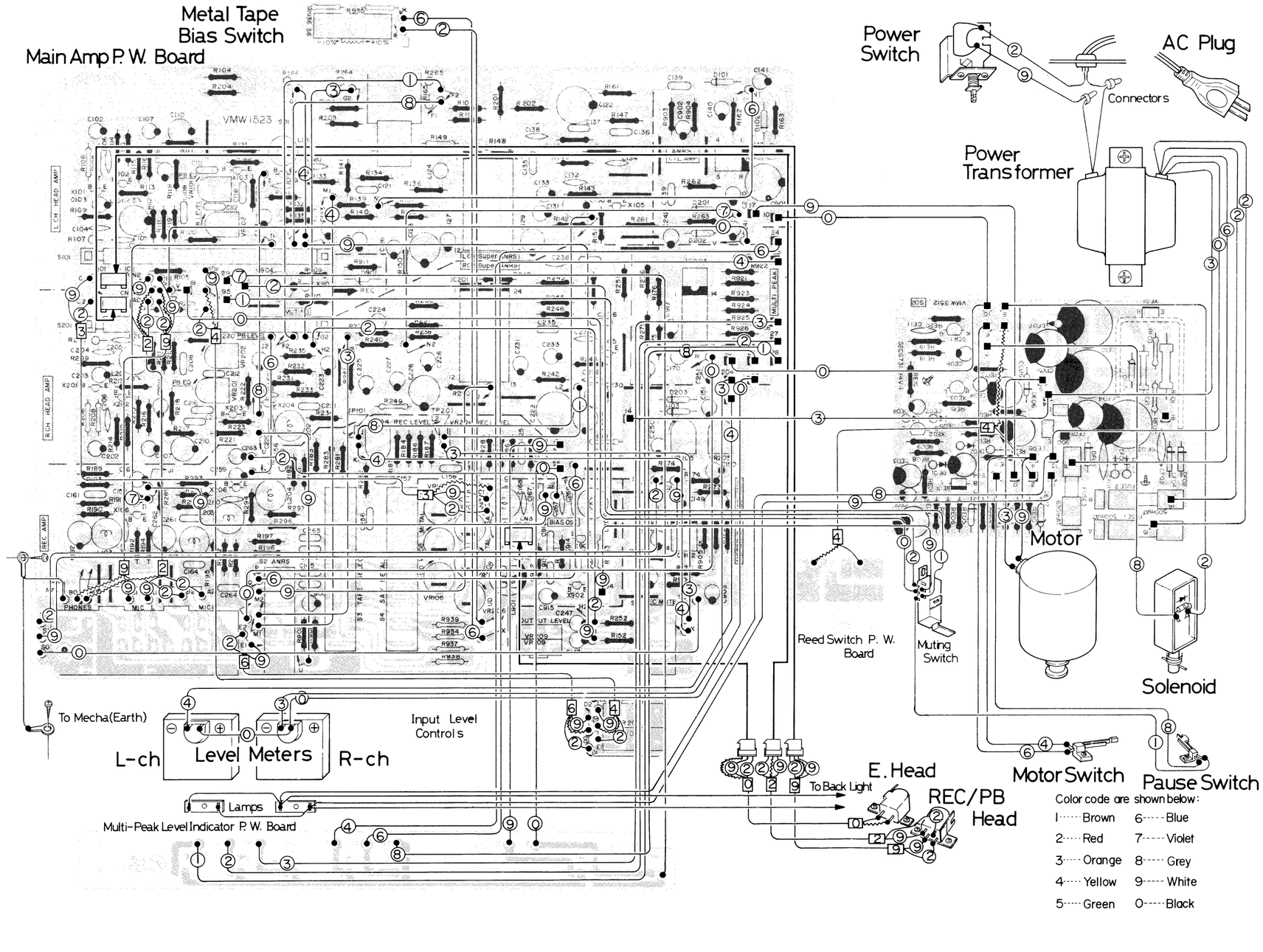
* Do not bring a magnetized metallic object (a screwdriver, for example) near the head as this will increase noise.

Oiling

Apply one or two drops of machine oil to the rewind roller Shaft and pinch roller shaft once or twice a year under normal conditions of use.

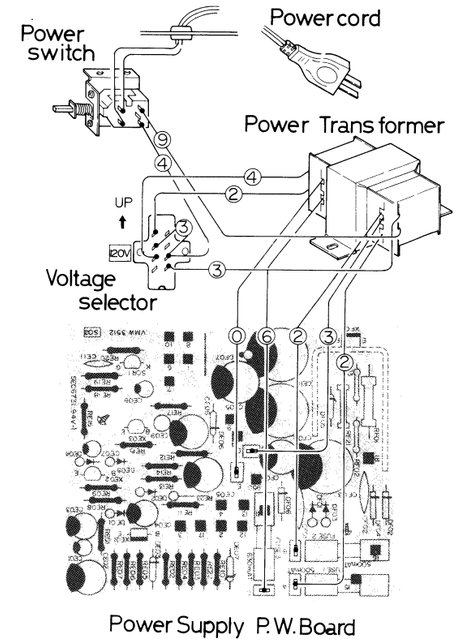
Avoid oiling them excessively, or rotation may become irregular because of oil splashes.

Wiring

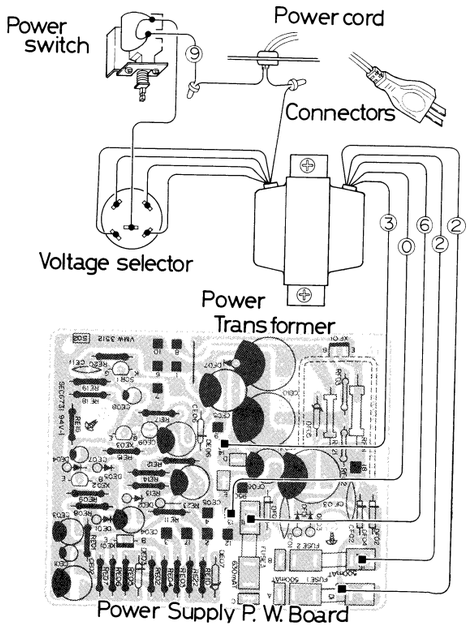


KD-A3 C/J

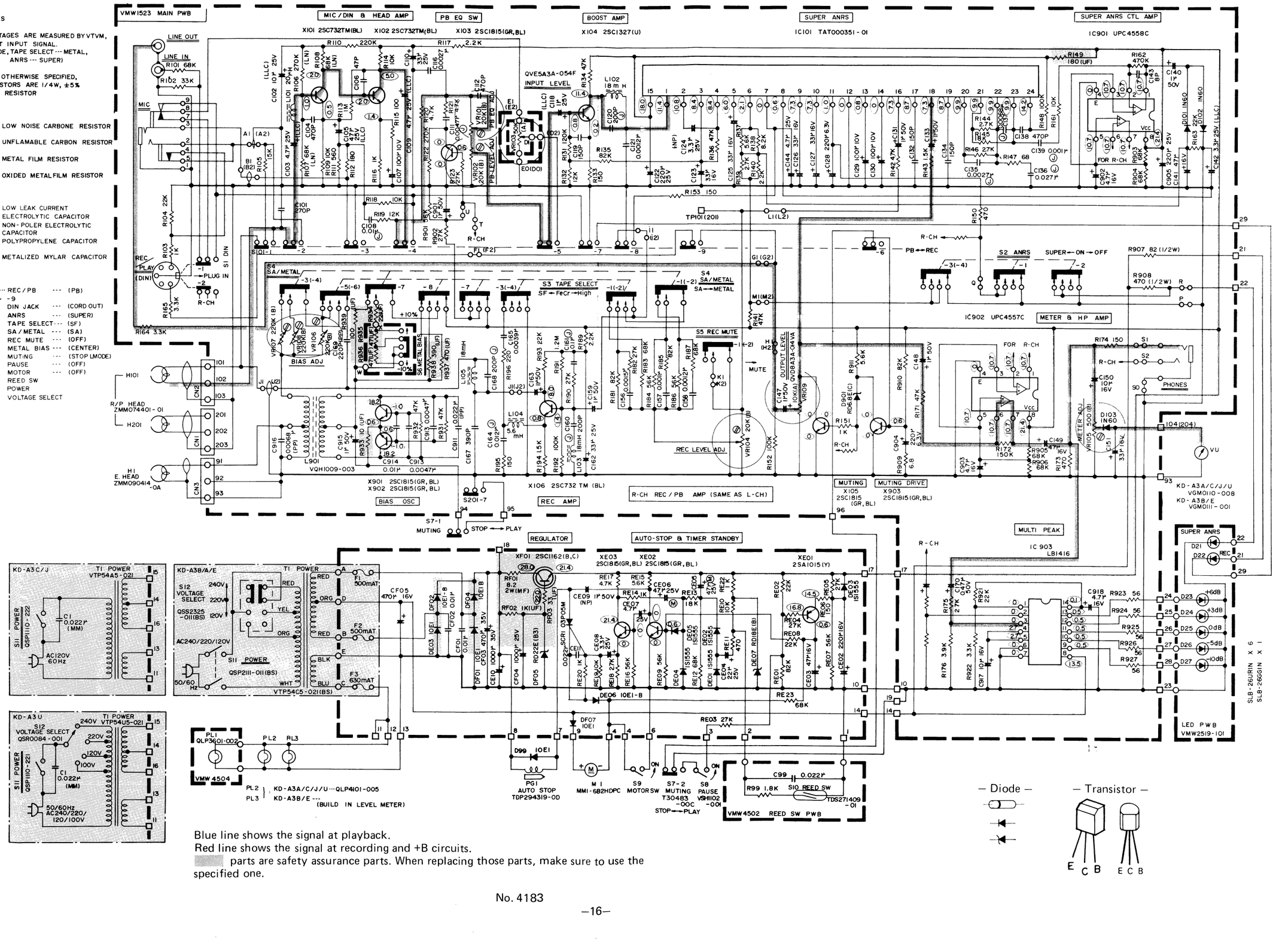
KD-A3 A/B/E



KD-A3 U



Standard Schematic Diagram of KD-A3



Blue line shows the signal at playback.
Red line shows the signal at recording and +B circuits.
parts are safety assurance parts. When replacing those parts, make sure to use the specified one.

⚠ parts are safety assurance parts.
When replacing those parts, make sure to use the specified one.

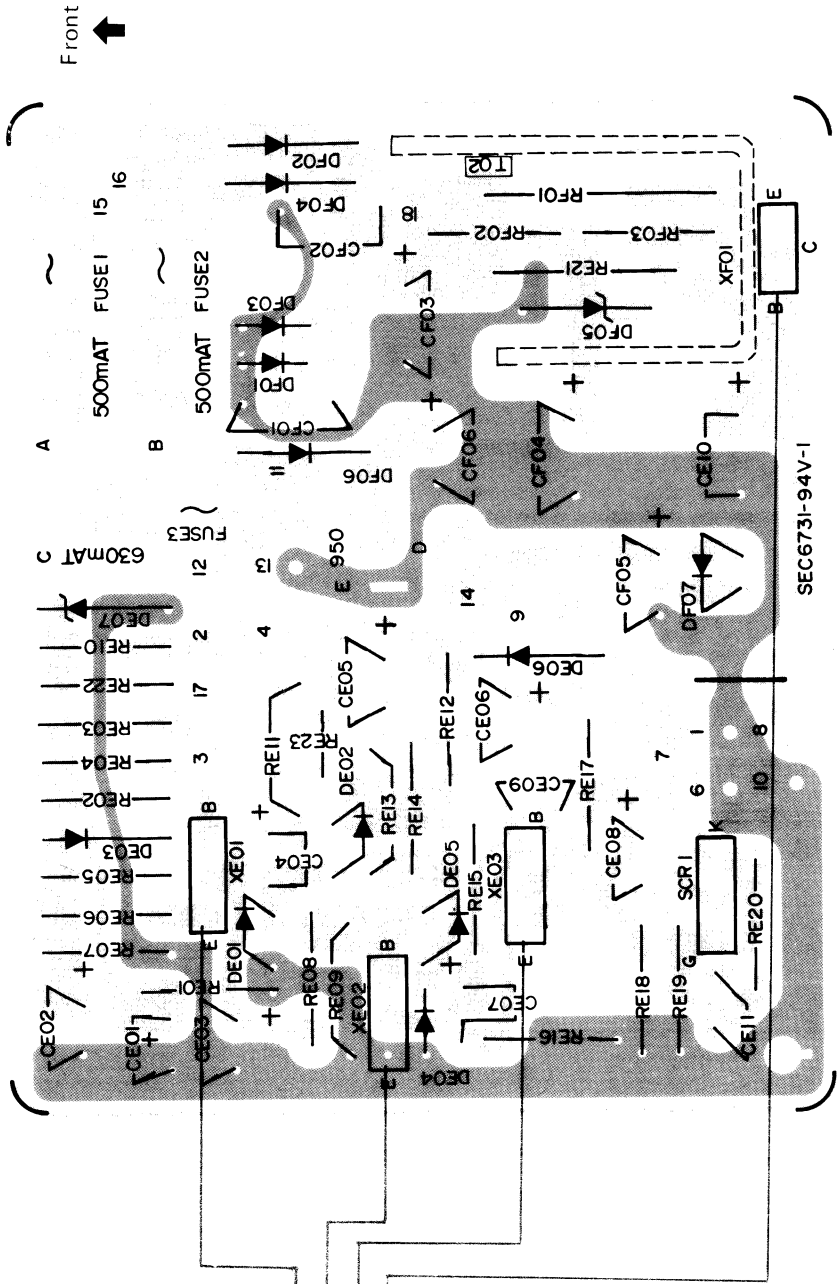
Main P.W. Board Parts List

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
	*VMW1523-001	P.W. Board	Not supply as parts ass'y	1
R101, 201, 183, 283, 187, 287, 903–906	QRD141K-683	C. Resistor	68 kΩ ¼ W	10
R102, 202	" -333	"	33 kΩ "	2
R103, 203, 116, 216, 151, 251	" -102	"	1 kΩ "	6
R104, 204, 163, 263, 193, 293, 921	" -223	"	22 kΩ "	7
R114, 214, 118, 218, 161, 261	" -103	"	10 kΩ "	6
R106, 206	QRZ0019-274	" (Low Noise)	270 kΩ "	2
R107, 207, 108, 208	" -683	" (")	68 kΩ "	4
R109, 209	QRD141K-103	C. Resistor	10 kΩ "	2
R110, 210	" -224	"	220 kΩ "	2
R111, 211	" -561	"	560 Ω "	2
R113, 213	" -105	"	1 MΩ "	2
R112, 212	" -181	"	180 Ω "	2
R117, 217, 140, 240, 189, 289	" -222	"	2.2 kΩ "	6
R174, 274, 195, 295, 153, 253	" -151	"	150 Ω "	6
R162, 262	" -474	"	470 kΩ "	2
R115, 215	" -101	"	100 Ω "	2
R119, 219, 132, 232	" -123	"	12 kΩ "	4
R105, 205	" -153	"	15 kΩ "	2
R122, 222	" -274	"	270 kΩ "	2
R123,223,175,275,902,182,282	" -273	"	27 kΩ "	7
R131, 231	" -124	"	120 kΩ "	2
R133, 233	" -151	"	150 Ω "	2
R134, 234, 142, 242, 120, 220, 121, 221	" -472	"	4.7 kΩ "	8
R135, 235, 181, 281, 185, 285	" -823	"	82 kΩ "	6
R136, 236, 141, 241, 171, 271, 931, 932	" -473	"	47 kΩ "	8
R137, 237, 911	" -562	"	5.6 kΩ "	3
R138, 238	" -822	"	8.2 kΩ "	2
R139, 239, 144, 244	" -822	"	8.2 kΩ "	4
R143, 243	" -152	"	1.5 kΩ "	2
R145, 245	" -183	"	18 kΩ "	2
R146, 246	" -272	"	2.7 kΩ "	2
R147, 247	" -680	"	68 Ω "	2
R148, 248, 192, 292, 152, 252	" -104	"	100 kΩ "	6
R149, 249	QRD146K-181	Unflamable C. Resistor	180 Ω " ⚠	2
R150, 250, 173, 273	QRD141K-471	C. Resistor	470 Ω "	4
R164, 264, 165, 265, 922	" -332	"	3.3 kΩ "	5
R172, 272	" -154	"	150 kΩ "	2
R176, 276	" -392	"	3.9 kΩ "	2
R184, 284, 186, 286, 901	" -563	"	56 kΩ "	5
R190, 290	" -273	"	27 kΩ "	2
R191, 291	" -125	"	1.2 MΩ "	2
R194, 294	" -152	"	1.5 kΩ "	2
R196, 296	" -221	"	220 Ω "	2
R907	QRD121K-821	"	820 Ω ½ W	1
R908	" -471	"	470 Ω "	1
R909	" -6R8	"	6.8 Ω "	1
R910	QRD141K-823	"	82 kΩ ¼ W	1

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
R923–927	QRD141K-560	C. Resistor	56 Ω ¼ W	5
R933	QRD146K-100	Unflamable C. Resistor	10 Ω " ⚠	1
R934	" -220	"	22 Ω " ⚠	1
R935, 936	" -470	"	47 Ω " ⚠	2
R937	" -471	"	470 Ω " ⚠	1
R938	" -391	"	390 Ω " ⚠	1
R939	" -101	"	100 Ω " ⚠	1
C101, 201	QCS11HK-271	F. Ceramic Capacitor	270 pF 50 V	2
C102, 202	QEB41EM-106N	E. Capacitor (Low Leak)	10 μF 25 V	2
C103, 203, 109, 209	" -475M	"	4.7 μF "	4
C105, 205	" -476M	"	47 μF "	2
C106, 206	QCS11HK-470	F. Ceramic Capacitor	47 pF 50 V	2
C917, 150, 250	QEW41CA-106N	E. Capacitor	10 μF 16 V	3
C108, 208	QFM41HJ-103	Mylar Capacitor	0.01 μF 50 V	2
C110, 210, 162, 262	QEW41EA-336N	E. Capacitor	33 μF 25 V	4
C912	QFM41HK-472	Mylar Capacitor	0.0047 μF 50 V	1
C138, 238, 104, 204	QCS11HK-471	F. Ceramic Capacitor	470 pF "	4
C116, 216, 135, 235	QFM41HK-272	Mylar Capacitor	0.0027 μF "	4
C118, 218	QEB41EM-105N	E. Capacitor (Low Leak)	1 μF 25 V	2
C119, 219, 132, 232, 134, 234	QCS11HK-151	F. Ceramic Capacitor	150 pF 50 V	6
C120, 220, 160, 260, 168, 268	QCS11HJ-201	"	200 pF "	6
C157, 257	QFM41HK-102	Mylar Capacitor	0.002 μF "	2
C122, 222	QEW41EA-227N	E. Capacitor	220 μF 25 V	2
C123, 223, 125, 225, 126, 226, 127, 227	QEW41CA-336N	"	33 μF 16 V	8
C124, 224	QEW41EA-335N	" (Non-polarized)	3.3 μF 25 V	2
C128, 228, 904	QEW40JA-227N	E. Capacitor	220 μF 6.3 V	3
C129, 229, 130, 230, 107, 207	QEW41AA-107N	"	100 μF 10 V	6
C131, 231	QEW41EA-105N	"	1 μF 25 V	2
C133, 233, 140, 240, 147, 247, 148, 248, 159, 259, 163, 263, 901, 915	QEW41HA-105N	"	1 μF 50 V	14
C136, 236	QFM41HJ-273	Mylar Capacitor	0.027 μF "	2
C137, 237	" -682	"	0.0068 μF "	2
C139, 239	" -102	"	0.001 μF "	2
C141, 241, 149, 249	QEW41CA-476N	E. Capacitor	47 μF 16 V	4
C142, 242	QEB41EM-335N	" (Low Leak)	3.3 μF 25 V	2
C143, 243	QCS11HK-8R0	F. Ceramic Capacitor	8 Ω 50 V	2
C144, 244	QEW41EA-475N	E. Capacitor	4.7 μF 25 V	2
C151, 251	QEW41CA-336N	E. Capacitor	33 μF 16 V	2
C156, 256	QFM41HK-152	Mylar Capacitor	0.0015 μF 50 V	2
C158, 258, 112, 211, 121, 221	" -122	"	0.0012 μF "	6
C161, 261	QFM41HJ-104	"	0.1 μF "	2
C164, 264	" -123	"	0.012 μF "	2
C165, 265	QFM41HK-392	"	0.0039 μF "	2
C167, 267	QCS11HK-391	F. Ceramic Capacitor	390 pF "	2
C169, 269	QCY12HK-221	"	220 pF "	2
C170, 270	QEW41HA-474N	E. Capacitor	0.47 μF "	2
C902, 903	QEW41CA-475N	"	4.7 μF 16 V	2
C905	QEW41EA-227N	"	220 μF 25 V	1
C911	QFP32AJ-223L	Polypropylene Capacitor	0.022 μF 10 V	1
C912	QFM41HK-472	Mylar Capacitor	0.0047 μF 50 V	1
C914, 111, 211	" -103	"	0.01 μF "	3
C916	QFP32AJ-682L	Polypropylene Capacitor	0.0068 μF	1
C918	QEW41CA-475N	E. Capacitor	4.7 μF 16 V	1

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
VR101, 201, 102, 202	QVP8A0B-024A	V. Resistor	20 kΩ	4
VR103, 203	QVE5A3A-054F	"	Input level 50 kΩ	2
VR104, 204	QVP8A0B-024A	"	20 kΩ	2
VR105, 205	" -052A	"	500 Ω	2
VR106, 206, 107, 207, 108, 208	QVP4A0B-224	"	220 kΩ	6
VR109, 209	QVD8A3A-014VA	"	Output level	2
	*TAZ336499-03	Volume Lug	Input level	1
L101, 201	TAC000493-01	Inductor	20 μH	2
L102, 202, 103, 203, 105, 205	VQP0001-183	"	or -183S	6
L104, 204	VQP0001-562	"	or -562S	2
L901	VQH1009-003	Osc. Coil		1
X101, 201, 102, 202	2SC732TM(BL)	Transistor		4
X103, 203, 105, 205, 901, 902, 903	2SC1815(GB, BL)	"		7
X104, 204	2SC1327(U)	"		2
X106, 206	2SC732TM(BL)	"		2
IC101, 201	TAT000351-01	IC	Super ANRS	2
IC901	UPC4558C	"		1
IC902	UPC4557C	"		1
IC903	LB1416	"		1
D101, 201, 102, 202, 103, 203	1N60	Ge. Diode		6
D901	RD6.8E(C)	Zener Diode		1
	*VMJ6002-005	Jack Ass'y	PIN	1
	QMC9014-006	DIN Socket		1
	QSP2210-061	Push Switch	for DIN	1
	VMJ5002-002	Jack Ass'y	Mic & PHONES	1
	QSS9201-005A	Slide Switch	Rec/PB	2
	QSL4309-021	Lever Switch	ANRS	1
	QSL8309-001	"	BIAS/EQ	1
	QSL8209-012	"	Metal/High	1
	QSL2209-003	"	Rec. Mute	1
	QWY123-022	Bus Wire		21
	E43727-002	Wrapping Tab		22
	V44221-001	Special Lug		1
	QMV5005-003	Plug Ass'y	CN-1, 2, 3	3

Power Supply P.W. Board Parts



E.Voltmeter			C.Tester			
E	C	B	E	C	B	
14.5	0.6	16.8	12.0	0.6	15.0	XE01
0	0	0.6	0	0	0.6	XE02
0	21.4	0	0	21.4	0	XE03
21.8	28.0	22.0	21.4	28.0	22.0	XF01

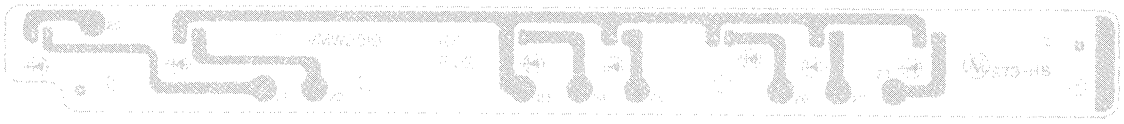
Power Supply P.W. Board Parts List

⚠ parts are safety assurance parts.
When replacing those parts, make sure to use the specified one.

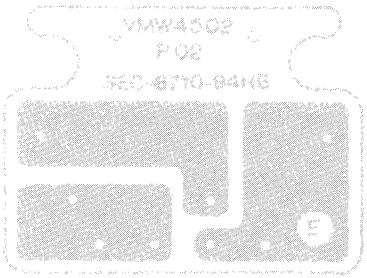
Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
	VMW3512-003	P.W. Board	Not supply as parts ass'y	1
RE01	QRD141K-823	C. Resistor	82 kΩ ¼ W	1
RE02	" -223	"	22 kΩ "	1
RE03, E04, E05	" -273	"	27 kΩ "	3
RE06	" -151	"	150 Ω "	1
RE07, E09, E16	" -563	"	56 kΩ "	3
RE08	" -223	"	22 kΩ "	1
RE10, E19	" -103	"	10 kΩ "	2
RE11	" -471	"	470 Ω "	1
RE12, E23	" -683	"	68 kΩ "	2
RE13	" -183	"	18 kΩ "	1
RE14, E20, E22	" -102	"	1 kΩ "	3
RE15	" -562	"	5.6 kΩ "	1
RE17	" -472	"	4.7 kΩ "	1
RE18	" -272	"	2.7 kΩ "	1
	QWY123-022	Bus Wire		1
RE21	QRG019J-471	O.M.F. Resistor	470 Ω	1
RF01	QRX029J-8R2	M.F. Resistor	8.2 Ω	1
RF02	QRD146K-102	C. Resistor	1 kΩ ⚠	1
RF03	" -330	"	33 Ω ⚠	1
CE02	QEW41CA-227M	E. Capacitor	220 μF 16 V	1
CE03	" -476N	"	47 μF "	1
CE04, E06	QEW41EA-226N	"	22 μF 25 V	2
CE05	QEW41EM-476N	"	47 μF "	1
CE07	QEW41EA-475M	"	4.7 μF "	1
CE08	" -335N	"	3.3 μF "	1
CE09	QEN41HA-105N	"	1 μF 50 V	1
CE10	QEW41VA-108SN	"	1000 μF 35 V	1
CE11	QCF11HP-223	F. C. Capacitor	0.022 μF 50 V	1
CF01, F02	QCF12HP-103	"	0.01 μF " ⚠	2
CF03	QEW41VA-477N	E. Capacitor	470 μF 35 V ⚠	1
CF04	QEW41EA-108N	"	1000 μF 25 V	1
CF05	QEW41CA-477N	"	470 μF 16 V ⚠	1
XE01	2SA1015(Y)	Si. Transistor		1
DE01, E02, E03, E04, E05	1S1555	Si. Diode		1
XE02	2SC1815(GR, BL)	Si. Transistor		1
XE03	2SC1815(GR, BL)	"		1
SCR1	03P05M	SCR		1
DE06, F02, F04	10E1-B	Si. Diode		3
DE07	*RD18E	Zener Diode		1
DF01, F03, F07	10E1	Si. Diode	⚠	3
DF05	RD22E(B3)	Zener Diode		1
XF01	2SC1162(B,C)	Si. Transistor	⚠	1
	TAR27448-01	Heat Sink	for XF01	1
	LPSP3008ZS	Screw	for XF01	1
	TAZ000331-02	Fuse Holder	KD-A3A/B/E	6
	E40130-001	Tab		5
	E43727-002	Wrapping Tab		15
	QMF51A2-R50BS	Fuse	KD-A3B ⚠	2
	QMF51A2-R63BS	"	KD-A3B ⚠	1
	QMF51A2-R50	"	KD-A3A/E ⚠	2
	QMF51A2-R63	"	KD-A3A/E ⚠	1

Other P.W. Board Parts

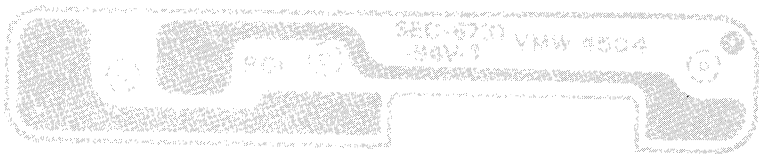
LED



Reed Switch



Back Light Lamp



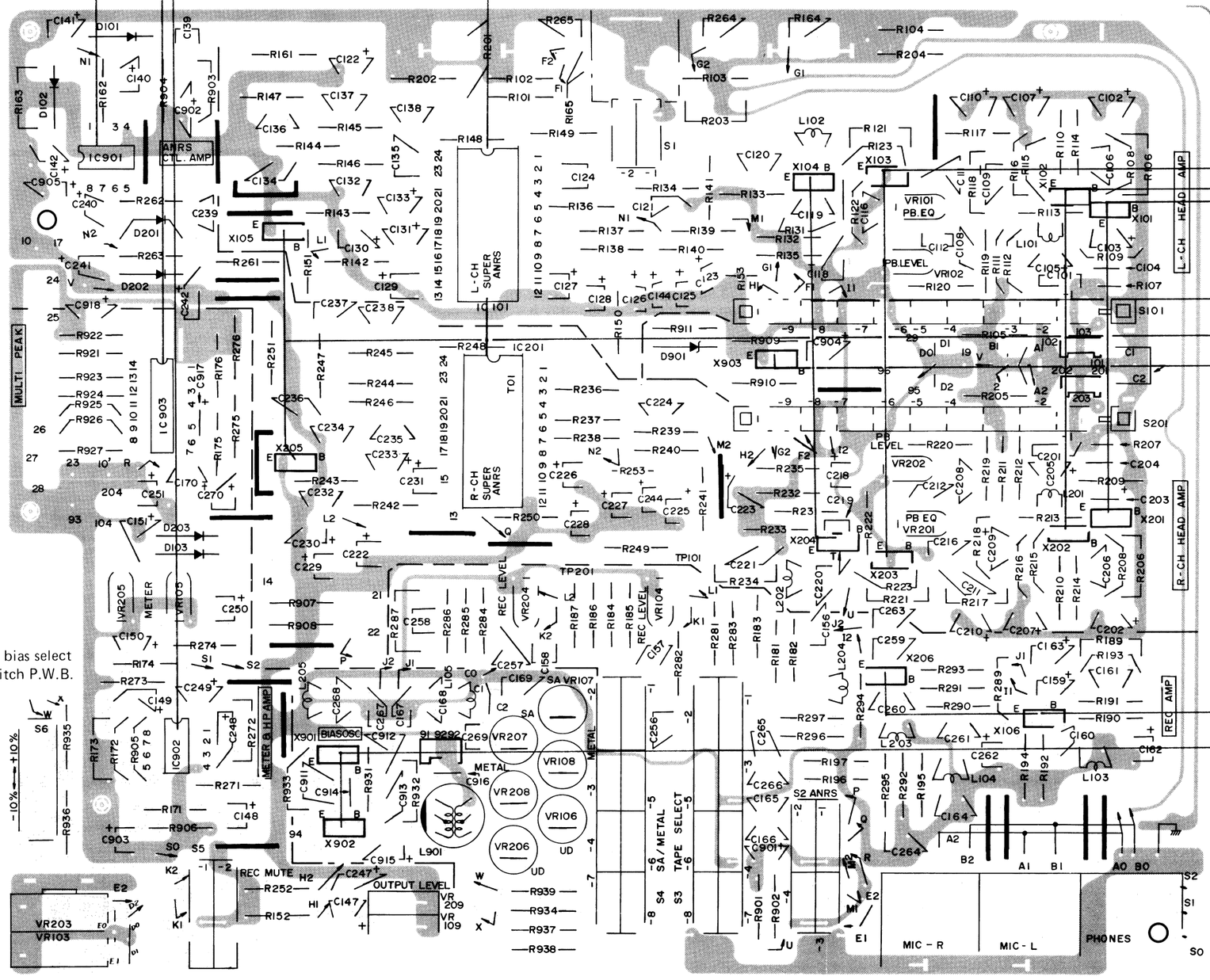
Other P. W. Board Parts List

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
(LED Indicators)				
	VMW2519-001	P.W. Board	for LED	1
	SLB-26URIN	LED	Red	6
	SLB-26GGIN	"	Green	1
	*VYH3147-001	LED Holder		1
(Reed Switch)				
	VMW4502-002	P.W. Board		1
	TDS271409-01	Reed Switch		1
C99	QCF11HP-223	Ceramic Capacitor		1
R99	QRD142K-182	C. Resistor		1
	TER271414-01	Spacer		1
	VKL4263-001	Bracket		1
	53492-002	Rubber Bushing	for fastening the P.W. Board	2
	T30302-063	Collar		2
	WNB3000N	Washer		2
	SPSP2608Z	Screw		
(Back Light Lamp)				
	VMW4504-001	P.W. Board		1
	QLP3601-002	Lamp		1

Printed Wiring Board Parts

Main P.W. Board Parts

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
IC101 201	E.Voltmeter	11.4	10.8	8.4	8.4	6.0	2.1	0	0.6	7.3	7.3	1.0	0	0.8	0	18.0	7.3	8.7	7.3	8.7	9.9	9.9	9.9	9.9	14.2
	C.Tester	10.4	10.8	8.4	8.4	6.0	2.1	0	0.6	7.3	7.3	1.0	0	0.8	0	18.0	7.0	8.7	7.3	8.7	9.9	9.9	9.9	9.9	14.2
IC903	E.Voltmeter	0	0	0	2.7	2.7	0	0	13.5	0.5	0.5	0.5	0.5	0.5	0.1										
	C.Tester	0	0	0	2.7	2.7	0	0	13.5	0	0	0	0	0	0.1										
IC901 902	E.V lometer	10.7	10.7	10.7	0	10.7	10.7	10.7	21.4																
	C.Tester	10.7	6.2	9.1	0	9.1	6.2	10.7	21.4																



Metal bias select switch P.W.B.

Volume P.W. Board

	E.Voltmeter			C.Tester		
	E	C	B	E	C	B
X103 203	0	0	0.6	0	0	0.6
X102 202	1.4	5.0	2.0	1.4	4.7	0.78
X101 201	0.5	2.0	1.0	0.44	0.78	0.28
X104 204	0.2	11.4	0.8	0.2	10.4	0.15
X105 205	0	0	0	0	0	0
X903	0	0	0.6	0	0	0.6
X106 206	0.8	8.0	1.4	0.8	7.2	0.3
X901 902	0.6	18.2	−1.0	0.6	18.2	−1.0

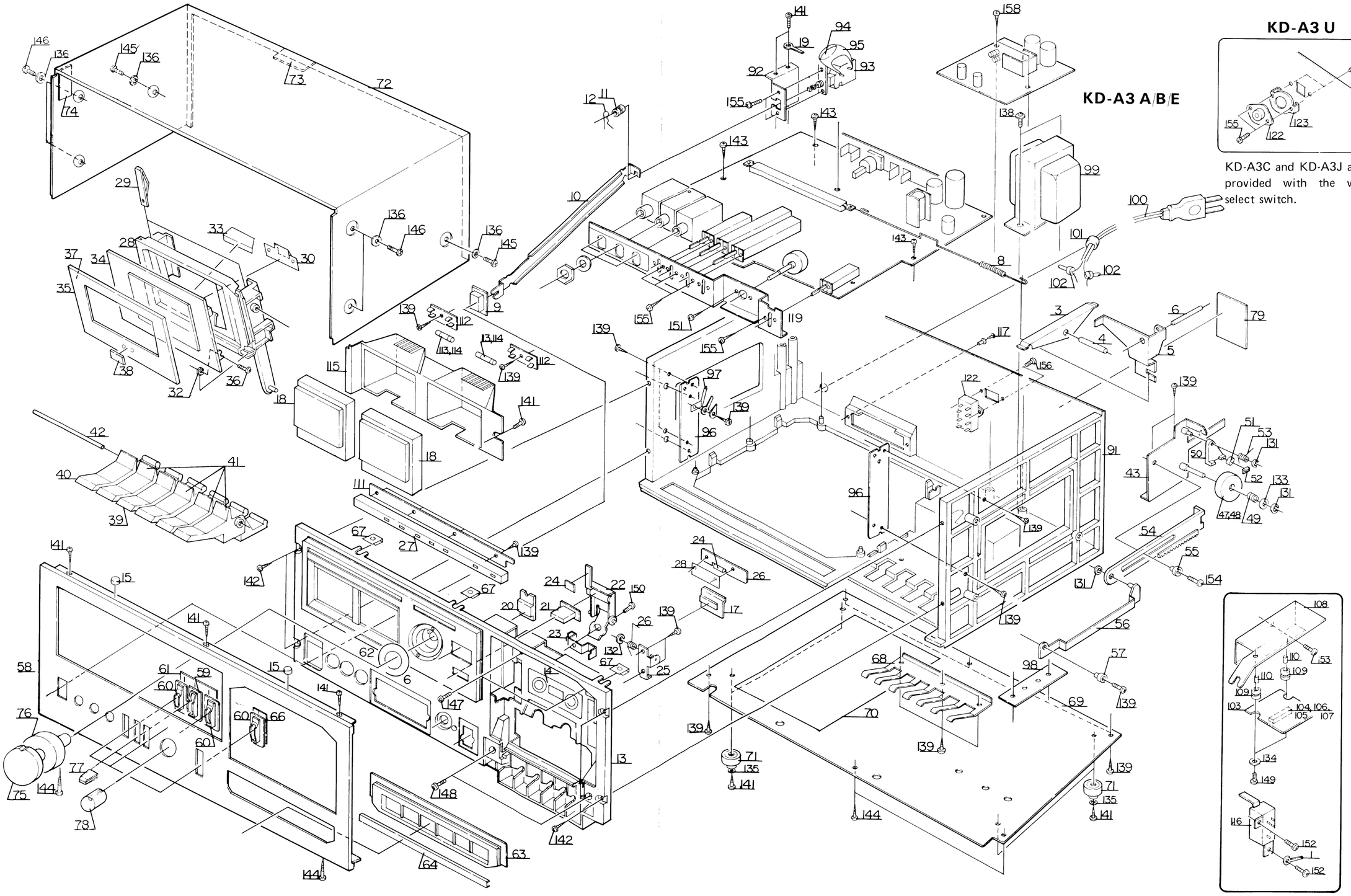
Voltage values are measured by the following meter without input signal at recording mode,

ANRS switch; super
Tape select switch; Metal

C. Tester = Circuit Tester (20 kΩ/1 V range impedance) used range; 1 V, 2.5 V, 10 V, 50 V.
E. Voltmeter = Electronic Voltmeter (10 MΩ or more impedance)

Enclosure Assembly and Electrical Parts

(Except P.W Board parts)



Enclosure Ass'y and Electrical Parts List
(except P.W. Board Parts)

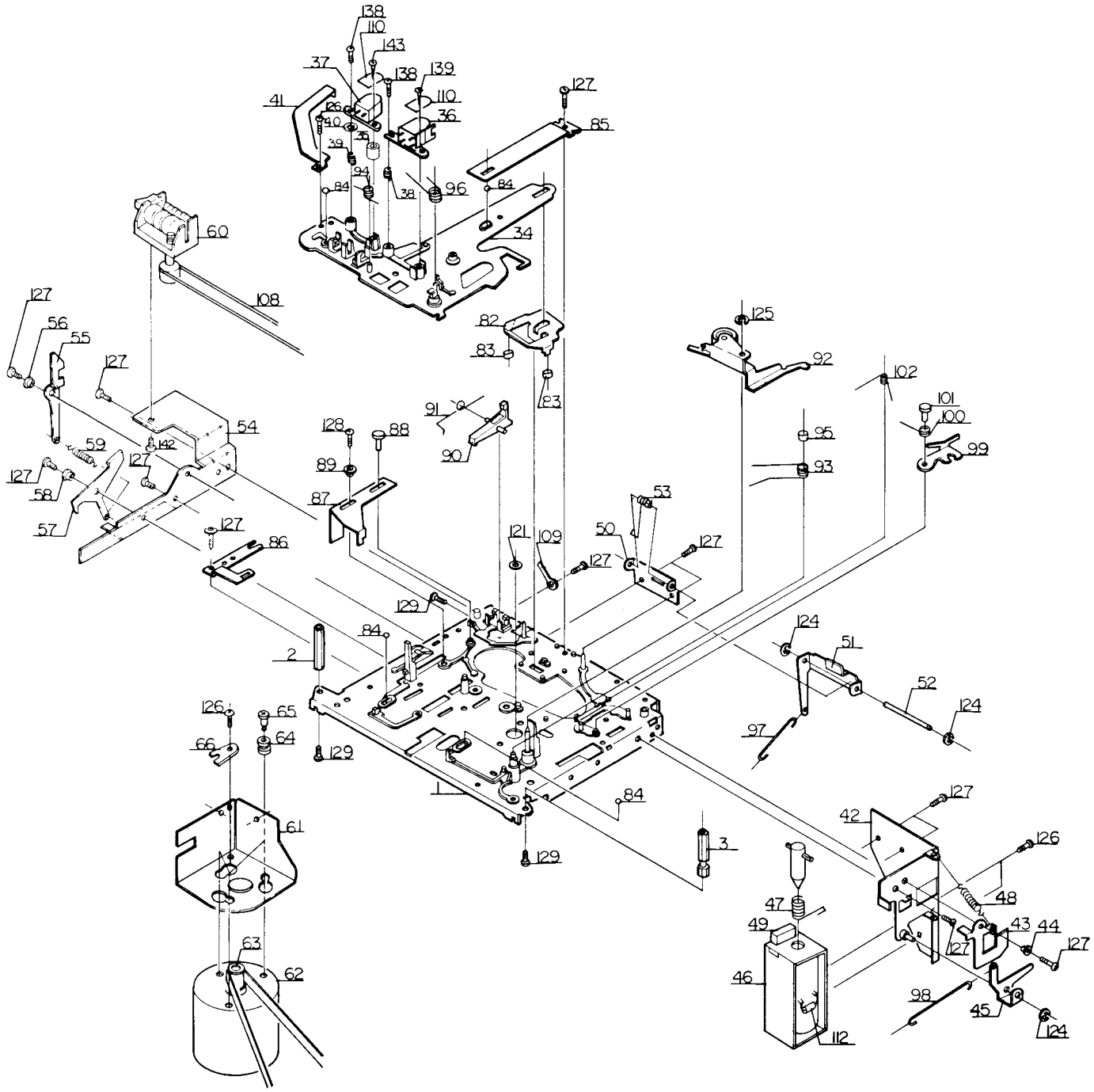
⚠ parts are safety assurance parts.
When replacing those parts, make sure to use the specified one.

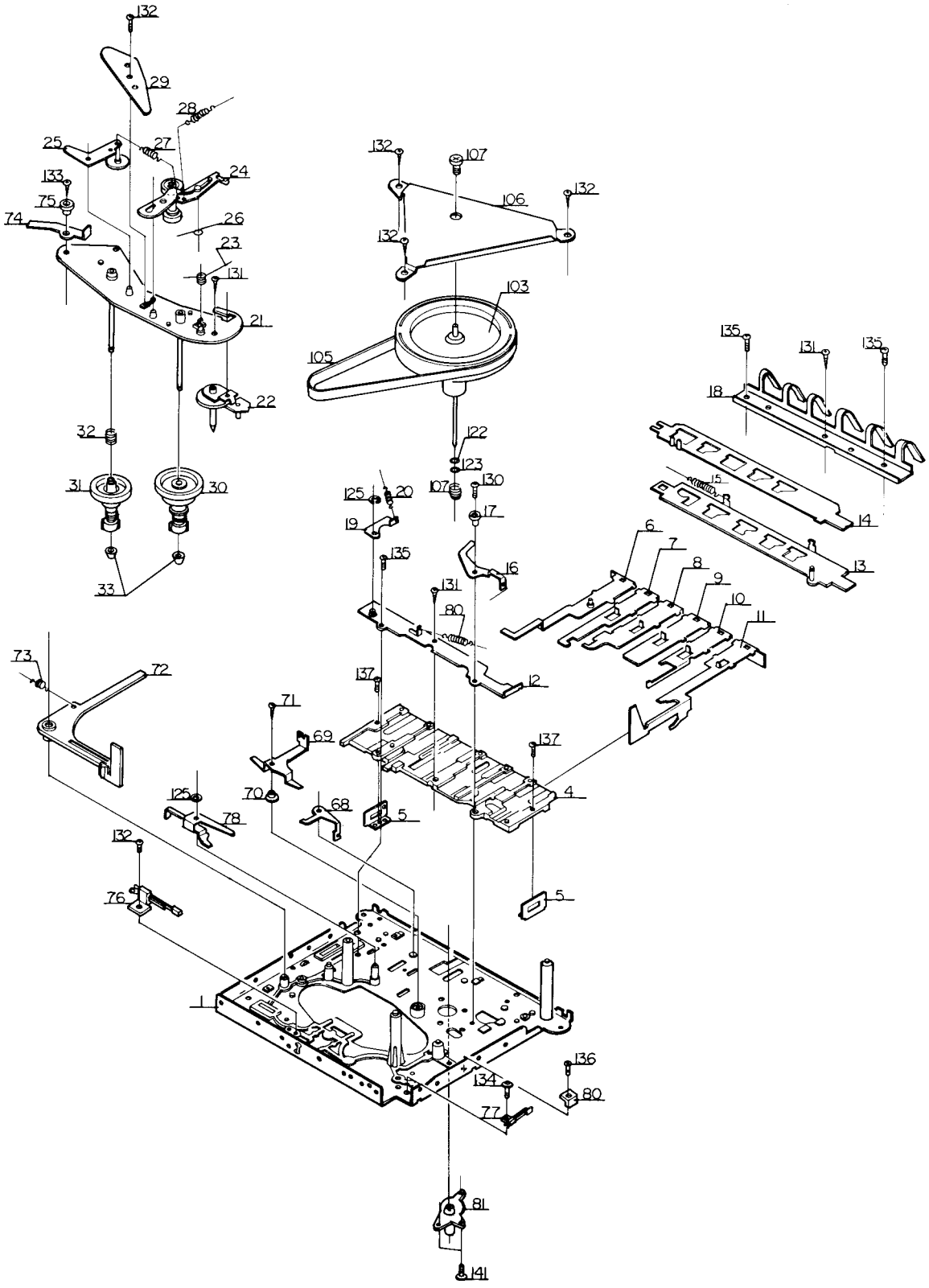
Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
1	VKZ4001-007	Wire Holder		1
2	QEW41EA-105N	E. Capacitor	1 μF 25 V	1
3	VKL4163-001	Rec. Arm (1)		1
4	VKH4121-003	Shaft		1
5	VKL4164-001	Rec. Arm (2)		1
6	VKH4121-002	Shaft		1
7	VKW4133-001	Spring	for VOL. Knob (Left Channel)	1
8	VKW4107-001	Record Spring		1
9	VXP4003-001	Power Switch Button		1
10	VYH4192-002	Bar		1
11	53492-1	Rubber Bushing		1
12	E48981-001	Stopper Pin		1
13–16,20	*ZCKDA3Y-CBF-1	Front Panel Ass'y		1
13	*VJC1072-002	Front Panel		1
14	VJD4162-001	Reel Disk Plate		1
16	VYTN401-001	Sheet		1
17	VJK4105-003	Cassette Indication		1
18	*VGM0111-001	Level Meter	KD-A3B	2
	VGM0110-008	"	KD-A3A/C/E/J/U	2
19	VKZ4001-011	Wire Holder		3
20	VJK4109-002	Counter Lens		1
21	VXP4015-002	Reset Button		1
22	VYH4216-002	Reset Lever		1
23	VKL4279-001	Reset Lever Bracket		1
24	VYSR101-003	Spacer	for Reset Button	1
25	VLK4190-00A	Spring Bracket Ass'y		1
26	VKW4119-001	Spring		1
27	*VYH3147-001	L.E.D. Holder		1
28	VJT2013-003	Cassette Holder		1
29	VKY4134-002	Cassette Spring (I)		1
30	VKY4135-001	" " (II)		1
31	TFH294507-02	Spacer		1
32	NNS3000ZS	Nut		1
33	VJD4169-001	Lid Plate		1
34,35, 37,38	ZCKDA3Y-CCA	Cassette Door Ass'y		1
34	VJT3022-003	Cassette Door		1
35	VJT3023-007	Cassette Door Plate		1
36	SDSP3012RS	Screw Ass'y	Cassette Holder	1
37	VJZ4013-001	Double Face		1
38	TJL344518-02	Head Mark		1
39	VXP3033-001	Mecha Button	Rec	1
40	VXP3033-002	"	Stop	1
41	VXP3033-003	"		4
42	VYH4177-001	Shaft		1
43	VKL4169-00A	Gear Frame Ass'y		1
44	VMW4504-001	P.W. Board		1
45	QLP3601-002	Lamp		1
47	VKS4108-003	Spur Gear		1
48	VKS4109-004	Brake Drum		1
49	VKW3001-006	Spring		1
50	VKS4110-002	Brake Arm		1
51	VKZ4111-002	Rubber Tire		1
52	VKL4271-001	Rubber Retainer		1

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
53	VKW4106-001	Torsion Spring		1
54	VKS3102-001	Rack Plate		1
55	VKH4123-001	Collar		1
56	VKL4152-00B	Lever Ass'y	Cassette Holder	1
57	VKH4103-001	Collar		1
58–60, 63, 64	ZCKDA3Y-CBF-2	Front Plate Ass'y		1
58	*VJC1068-002	Front Plate		1
59	VJD4278-001	Lever Escutcheon (III)		2
60	VJD4277-001	" (II)		2
62	VJD4134-002	Switch Escutcheon		1
63	VJD2136-001	Button Escutcheon		1
64	VJD4286-001	Control Plate		1
65	VYSA1R8-027	Spacer	Front Panel	6
66	T47818-002	Spacer	Front Plate	3
67	TFB313563-02	Plate Nut		3
68	VKY4111-002	Button Spring	Amp. Chassis	1
69	VKL2103-001	Bottom Cover		1
70	VKL4291-001	Shield Plate		1
71	VJF3001-001	Foot		1
72	VJC1018-003	Top Cover		1
73	VYSH110-015	Spacer		1
74	VKL4246-001	Bracket		1
75	VXL4067-00B	Volume Knob (L) Ass'y		1
76	VXL4068-00A	" (R) "		1
77	VXQ4019-001	Lever Knob		4
78	VXL4069-00B	Volume Knob Ass'y		1
79	VYN2045-003HA	Name Plate	KD-A3A	1
	" -002HA	"	KD-A3B	1
	" -004HA	"	KD-A3C	1
	" -005HA	"	KD-A3E	1
	" -006HA	"	KD-A3J	1
	" -007HA	"	KD-A3U	1
91	VYH1105-003	Chassis		1
92	VKL4165-001	Switch Bracket	for Power Switch	1
93	QSP2111-011	Push Switch	KD-A3A/E ⚠	1
	QSP2111-011BS	"	KD-A3B ⚠	1
	QSP1110-222	"	KD-A3C/J ⚠	1
	QSP1110-221	"	KD-A3U ⚠	1
94	QFA72BM-223	M.P. Capacitor	KD-A3C 0.02 μF ⚠	1
	QFH72BM-223	M.M. Capacitor	KD-A3J " ⚠	1
	QFH53AM-223	"	KD-A3U " ⚠	1
95	T47047-001	Capacitor Boot	KD-A3J/U ⚠	1
96	VKL4254-003	Bracket	Side	2
97	VKY4125-002	Earth Spring	for Top Cover Earth	1
98	VKL4167-001	Transformer Bracket		1
99	VTP5405-021	Power Transformer	KD-A3A/E ⚠	1
	VTP54C5-021BBS	"	KD-A3B ⚠	1
	VTP54A5-021	"	KD-A3C/J ⚠	1
	VTP54U5-021	"	KD-A3U ⚠	1
100	QMP2560-200	Power Cord	KD-A3A ⚠	1
	QMP9017-008BS	"	KD-A3B ⚠	1
	QMP1200-200	"	KD-A3C/J ⚠	1
	QMP3900-200	"	KD-A3E ⚠	1
	QMP7600-200	"	KD-A3U ⚠	1

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
101	QHS3876-162	Strain Relief	KD-A3A	1
	QHS3876-252BS	"	KD-A3B	1
	QHS3056-252	"	KD-A3C/J/U	1
	QHS3876-252	"	KD-A3E	1
102	TAW000504-01	Wire Connector	KD-A3B/C/J/U	2
103	VMW4502-002	P.W. Board	for Reed Switch	1
104	TDS271409-01	Reed Switch		1
105	QCF11HP-223	Ceramic Capacitor	C99 0.022 μF, 50 V	1
106	QRD142K-182	C. Resistor	R99 1.8 kΩ ¼ W	1
107	TER271414-01	Spacer		1
108	VKL4263-001	Bracket		1
109	53492-002	Rubber Bushing		2
110	T30302-063	Collar		2
111	VMW2519-001	P.W. Board	for LED	1
112	QMG1121-003	Lamp Holder	KD-A3A/C/E/J/U	2
113	QLP4104-005	Lamp	"	2
114	VJZ4006-001	Lamp Shade	"	2
115	VKS2105-001	Lamp Cover	"	1
	VKL3207-001	Meter Bracket	KD-A3B	1
116	T30483-00C	Switch Ass'y	Muting	1
117	E48729-003	Plastic Rivet	for PIN Jack Ass'y	2
118	50242-5	Lug	for Mecha. Ass'y Earth	1
119	VKL3182-002	Volume Bracket		1
120	VYTA412-001	Blind		1
121	VYTA419-001	Blind		1
122	QSS2325-011	Slide Switch	KD-A3A/E, Voltage Selector ⚠	1
	QSS2325-011BS	"	KD-A3B " ⚠	1
	QSR0084-001	Rotary Switch	KD-A3U ⚠	1
123	VKL4275-001	Bracket	KD-A3U	1
124	VND4016-001	Metal Sticker		1
125	VMA4105-001	Shield Plate		1
131	REE2000	E-ring	Brake Drum x 1, Rubber Tire x 1, Lever Ass'y x 1	3
132	REE3000	"	Spring Bracket Ass'y	1
133	WNS2600Z	Washer	Brake Drum	1
134	WNB3000N	"	Reed Switch P.W. Board	2
135	WLS3000	"	Foot	1
136	Q03093-502	"	Top Cover	6
137	" -524	"	Rubber Retainer	1
138	DPSP4018Z	Screw	Power Transformer Bracket	2
139	SBSB3008Z	Tapping Screw	Spring Bracket Ass'y x 2, LED Holder x 1, Frame Ass'y x 2, Bottom Cover x 5, Button Spring x 3, Side Bracket x 5, Lamp Holder x 2	20
140	SBSB3008V	"	Volume Bracket	2
141	SBSB3010Z	"	Lamp Cover x 1, Plate Nut x 3, Bottom Cover x 4, Switch Bracket x 2	10
142	SBSB3012Z	"	Front Plate	4
143	SBSB3012V	"	Main P.W. Board	3
144	SBSB3014Z	"	Bottom Cover x 1, Front Plate x 2	3
145	SDSB4010RS	Screw	Top Cover	2
146	SDSP4014RS	"	"	4
147	SDSP3006RS	"	Mecha. Ass'y	2
148	SDSP3016RS		"	2
149	SPSP2608Z	"	Reed Switch P.W. Board	2
150	SPSP3004ZS	"	Reset Lever Bracket	1
151	SPSP3008VS	"	Volume Bracket	1
152	LPSP2605Z	"	Muting	2
153	LPSP2606Z	"	Frame Ass'y x 1, Counter Bracket x 2	3
154	LPSP2608Z	"	Rack Plate	1
155	LPSP3006ZS	"	Power Switch x 2, Lever Switch x 4, Rotary Switch x 2 (KD-A3U)	8
156	SDBP3010RS	"	for Voltage Selector (KD-A3A/B/E)	2
157	SDBP3006RS	"	for Rotary Switch Bracket (KD-A3U)	2
158	SBSB3010V	Tapping Screw	for Power Supply P.W. Board	2

Mechanical Component Parts

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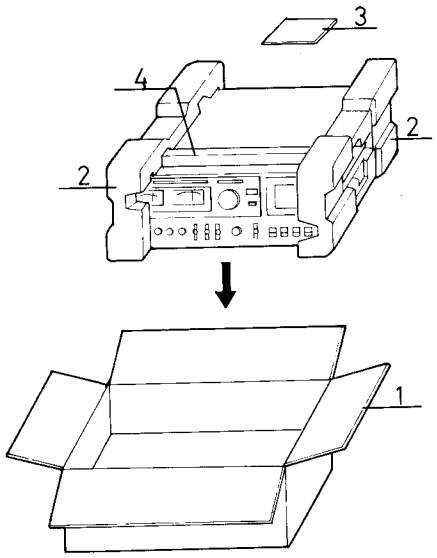
Mechanical Component Parts List

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
1	*TGC357101-0F	Chassis Base Ass'y		1
2	VKH4153-001	Stud	Panel Ass'y	1
3	VKH4153-002	Stud	"	1
4	TEP357103-01	Push Bar Case		1
5	VKL4311-001	Cam Guide Bracket		2
6	VKL4171-00B	Stop Eject Bar Ass'y		1
7	VKL4307-001	Rew. Bar		1
8	VKL4309-001	Rec. Bar		1
9	TGB357413-0D	Play Bar Ass'y		1
10	VKL4310-001	F.F. Bar		1
11	VKL4173-001	Pause Bar		1
12	VKL4245-00B	Push Bar Plate Ass'y		1
13	TGB357302-0H	Push Bar Cam (1) Ass'y		1
14	VKL3130-002	Push Bar Cam (2)		1
15	VKW3000-001	Tension Spring	Cam (1)	1
16	VKL4175-001	Kick Arm		1
17	T43909-008	Metal		1
18	VKY3101-001	Button Spring		1
19	VKL4244-001	Select Lever		1
20	VKW3000-014	Spring	Select Lever – Cam Guide Bracket	1
21	TGP357305-0A	Reel Disk Bracket Ass'y		1
22	TGP357425-0D	Take-up Bar Ass'y		1
23	TFW357430-02	Take-up Bar Spring		1
24	TGB357438-0A	F.F. Arm Ass'y		1
25	TGB357447-0A	Rew. Idler Arm Ass'y		1
26	TFW357446-01	F.F. Arm Spring		1
27	T30300-205	Tension Spring	Rew. Arm – F.F. Arm	1
28	VKW3002-001	Tension Spring	F.F. Arm – Rew. Lever	1
29	VKL4312-001	Arm Stopper		1
30	TGP357431-0D	Reel Disk Ass'y	Take-up	1
31	TGP357431-0C	"	Supply	1
32	*VKW3001-037	Compression Spring	Back Tension	1
33	TEP357437-02	Reel Stopper		2
34	*TGB357202-0G	Head Base Ass'y		1
35	*VKH3000-020	Collar	E. Head	1
36	ZMM074401-0D	R/P Head Ass'y		1
37	ZMM090414-0A	E. Head Ass'y		1
38	T30301-148	Compression Spring	R/P Head	1
39	*VKW3001-034	Compression Spring	E. Head	1
40	VKH3000-015	Collar		1
41	VKL4475-001	Switch Bar		1
42	VKL4176-00A	Solenoid Bracket Ass'y		1
43	VKL4178-001	Timer Rec. Arm		1
44	VKH3001-004	Flange Collar		1
45	VKL4179-001	Stop Arm (1)		1
46	TDP294319-0D	D.C. Solenoid	for Auto Stop	1
47	VKW4108-001	Spring	D.C. Solenoid	1
48	T30300-187	Spring	Timer Rec. Arm	1
49	TJN265423-09	Panel Cushion	D.C. Solenoid	1
50	VKL4183-001	Holder Bracket		1
51	VKL4184-001	Pressure Arm		1
52	VKH4126-001	Shaft		1
53	VKW4109-001	Spring	Pressure Arm	1
54	VKL3117-002	Counter Bracket		1
55	VKL4180-002	Lock Arm		1

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
56	T43909-008	Metal		1
57	VKL4181-001	Safety Arm		1
58	VKH3001-005	Flange Collar		1
59	T30300-153	Spring	Lock Arm – Safety Arm	1
60	VKC5104-00A	Counter Ass'y		1
61	VKL4185-003	Motor Bracket		1
62	MMI-6B2HDPC	Motor		1
63	VKR4108-002	Motor Pulley		1
64	TER357465-02	Cushion Rubber		3
65	VKZ4109-001	Motor Screw		3
66	TFB345469-01	Rubber Stopper		1
67	VKZ4001-011	Wire Holder		1
68	VKL4115-001	Rec. Lock Lever		1
69	TFB357453-01	F.F. Lever		1
70	VKH4103-001	Collar		1
71	GPSA2608Z	W. Tapping Screw	F.F. Lever	1
72	TEP357422-05	Brake Lever		1
73	T30300-204	Tension Spring	Brake Lever – Chassis Base	1
74	VKL4186-001	Kick Arm		1
75	VKH4103-001	Collar		1
76	V31162-001	Leaf Switch	Motor	1
77	VSH1102-001	Switch Ass'y	Pause	1
78	TFB357452-02	Rew. Lever		1
79	T30300-211	Spring		1
80	TEP361406-01	Pause Bar Guide		1
81	VKF3101-00A	Capstan Metal Ass'y		1
82	VKL4248-001	Brake Bar		1
83	TER313493-01	Brake Rubber		2
84	T41615-004	Steel Ball	Chassis Base – Head Base	4
85	VKY4115-001	Spring Plate		1
86	TFP357460-03	Head Base Spring Plate		1
87	VKL4187-001	Rec. Push Bar		1
88	TEP357469-02	Stopper		1
89	VKH3001-015	Flange Collar		1
90	TEP357406-04	Rec. Safety Lever		1
91	VKW4152-001	Rec. Safety Lever Spring		1
92	TGB291415-0D	Pinch Roller Arm Ass'y		1
93	TFW357463-02	Pinch Roller Spring		1
94	VKW4147-001	Rec Lock Lever Spring		1
95	VKH3000-005	Collar		1
96	TFW357467-05	Head Base Spring		1
97	VKW4110-003	Wire	Pressure Arm	1
98	VKW4110-002	Wire	Auto Stop	1
99	VKL4228-002	Pause Lock Cam		1
100	VKW4127-001	Pause Lock Cam Spring		1
101	TEP357469-02	Stopper	Pause Lock Cam	1
102	TFW357470-02	Take-up Spring		1
103	VKF3102-00B	Flywheel Ass'y		1
104	VKW3001-010	Spring	Thrust	1
105	VKB3001-003H	Belt	Capstan	1
106	VKL4122-001	Flywheel Bracket		1
107	TEP349420-01	Thrust Screw	Bracket	1
108	VKB3000-003H	Belt	Counter	1
109	VKZ4001-007	Wire Clamp		3
110	THC037417-02	Head Plate		2

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
111	10E1	Si. Diode	Solenoid	1
121	Q03093-522	Washer	Oil-cut ϕ 2.4 x ϕ 5.5 x t 0.5	1
122	" -627	"	Thrust ϕ 2.6 x ϕ 7.5 x t 0.3	1
123	" -827	"	Thrust ϕ 2.6 x ϕ 4.7 x t 0.25	1
124	REE2000	"E" Ring	Stop Arm (1) x 1, Shaft x 2	3
125	REE2500	"	Select Lever x 1, Rewind Lever x 1, Pinch Roller Arm Ass'y x 1	3
126	LPSP2604Z	Screw	Switch Lever x 1, DC Solenoid x 2, Rubber Stopper x 1	4
127	LPSP2605Z	"	Pressure Arm x 2, Timer Recording Arm x 1, Solenoid Bracket x 3, Counter Bracket x 2, Lock Arm x 1, Motor Pulley x 2	11
128	LPSP2606Z	"	Recording Push Bar	1
129	LPSP3006ZS	"	Stud	2
130	SPSP2604Z	Tapping Screw	Wire Holder	1
131	SBSB2606Z	"	Push Bar Plate x 1, Button Spring x 1, Arm Stopper x 1	3
132	SBSB2608Z	"	Reel Disk x 1, Motor Switch x 1	2
133	SBSB2610Z	"	Reel Disk	1
134	SDSP2606Z	Screw	Pause Switch	1
135	SDSP2608Z	"	Push Bar Case	4
136	SPSP2008Z	"	Pause Bar Guide	1
137	SPSP2604Z	"	Cam Guide Bracket x 2, Kick Arm x 1, Spring Plate x 1, Head Base Spring Plate x 1	5
138	SPSX2012Z	"	R/P Head x 1, E. Head x 1	2
139	SPSB2006Z	Tapping Screw	R/P Head	1
140	SBSB2608Z	"	Flywheel Bracket	3
141	SSSP2004Z	Screw	Capstan Metal Ass'y	3
142	SSSP3008ZS	"	Counter	1
143	SPSX2010Z	"	E. Head	1

Packing



Packing Material List

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
1, 2, 4	VPA3025-00F	Packing Case Ass'y	KD-A3A/B/E/J/U	1 set
	" -00G	"	KD-A3C	"
1	VPA3025-008	Case	KD-A3A/B/E/J/U	1
	" -009	"	KD-A3C	1
2	VPH2104-001	Cushion		2
3	QPGA060-06005	Envelope	for Deck	1
	AP4056A-036	"	for Provided Cords	2
	QPGB024-03404	"	for Instruction Book	1
	TKS000501-01	Sheet	for Deck	1
4	VPA3009-003	Ten ate		1

Accessories

Parts No.	Parts Name	Remarks	Q'ty
VMP0002-00A	PIN Cord	KD-A3A/C/J/U	2
CN-201	DIN Cord	KD-A3B/E	1
VYA4001-00A	Head Cleaning Stick		1
*VNN0036-301	Instruction Book		1
TLJ000476-02	ANRS Seal		1
TLJ000477-02	Super ANRS Seal		1
BT20029	Warranty Card	KD-A3A	1
VND4013-001	Warning Label	KD-A3A/B/E Rear Panel	1
T46328-003	Caution Label	KD-A3A/B	1
BT20013B	Guarantee Certificate	KD-A3B	1
TJL000443-01	Seal	KD-A3B	1
	BEAB Label	KD-A3B	1
QZL1002-003BS	Warning Label	KD-A3B Power Cord	1
VNC5004-001	Mark Sticker	KD-A3B/E	1
BT20025C	Warranty Card	KD-A3C	1
T44362-001	CSA Marker	KD-A3C	1
TLT000505-01	UL/CSA Caution Label	KD-A3C/J	2
T46328-004	Caution Label	KD-A3E	1
BT20032	Warranty Card	KD-A3J/U for PX	1
BT20024B	Special Reply Card	KD-A3J/U for PX	1
BT20023	Service Procedure	KD-A3J/U for PX	1
V04062-001	Siemens Plug	KD-A3U for PX	1
T46328-001	Caution Label	KD-A3U	1
E47795-1	EP Mark	KD-A3U for PX	1

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VICTOR COMPANY OF JAPAN, LIMITED.
RADIO & RECORDING MACHINE DIVISION 804 Futoo-cho, Kohoku-ku, Yokohama, Japan

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